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SUBLIMINAL VISUAL STIMULATION: A STUDY OF ITS INFLUENCE ON SUBSEQUENT IMAGES AND DREAMS

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INTRODUCTION

It is commonly acknowledged that perception is the resultant of interacting forces which are themselves not perceived and not conscious. In this sense few psychologists would question the existence of an "unconscious" which has an important influence on perception. The novel question currently being asked by investigations into the consequences of subliminal sensory stimulation, though perhaps rooted in this position, takes it considerably further in asking: Can complex and organized sensory stimuli, which are effectively prevented from being perceived, nevertheless be *registered*, and then proceed to influence cognition?

In other words, let one visually stimulate a person with a simple figure, but prevent him from perceiving it. He can only report that he didn't see what was shown him—the exposure was too brief, the figure too faint, another stimulus masked it, or the like. Was that figure nonetheless registered? Did it attain a palpable status beyond the level of awareness? Will it show itself subsequently in the person's conscious cognition?

A substantial amount of exploratory work as well as a few validating experiments have already been reported in answer to these questions. The effects of subliminal visual stimulation upon dreams and images have been studied extensively by Fisher (3–5) who derived his interest in this area of study from the ground-breaking work of Poetzl (12, 13), and of Allers and Teler (1). Until recently, Fisher's efforts to demonstrate the phenomenon have been confined to exploratory experiments that relied largely upon clinical methods. But recently, rigorously controlled experiments have been conducted in this area by Klein, Holt, Spence, and others at New York University (8, 9), by Shevrin and Luborsky at the Menninger Clinic (10, 14) and at Mount Sinai Hospital by the present writers (6).

While providing positive empirical evidence of the phenomenon and showing that it is not an artifact of the methods used to produce and evaluate it, each one of these studies illustrates how unstable and small-scale it usually is. Under the experimental conditions that have been used, there are relatively few instances of a clear-cut and unequivocal emergence of a subliminally presented stimulus into subsequent imagery and dreams. Such emergence, for the most part, appears to be piecemeal and fragmentary, and seems frequently disguised by means of transformations. Appraised by objective criteria, its effects can often be detected only by subjecting a sizeable amount of such data to statistical analysis. A major hurdle to the detection of any effect is the fact that people's images and dreams are so complex, and so multiply and

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variously determined, that it is especially difficult to single out the effect of an experimentally presented stimulus while at the same time allowing for, and assessing, chance correspondences, as well as the effects of habit and of extraneous factors. Consequently, further work still is needed to pursue the search for techniques of obtaining, enhancing, and reliably evaluating this intriguing phenomenon.

PURPOSE

This experiment is part of a larger project the overall goal of which is to isolate and study the consequences of subliminal visual stimulation upon imaging and dreaming. Fisher's earlier demonstrations (3–5), though generally persuasive and often striking, relied heavily upon 1) a *post hoc* approach to the data, 2) emphasis upon selected examples, and 3) a quasi-clinical contact with subjects. The present experiment is the second of two in which a concerted attempt was made to overcome the shortcomings of these studies, to establish the phenomenon on a sounder empirical footing, while at the same time exploring variables that may give clues about the underlying processes.

The first experiment (6) succeeded substantially in overcoming the first two shortcomings mentioned above, while it tried to preserve the experimental situation as much as possible. Eleven *Ss* were seen individually, and, in separate sessions, subliminally stimulated with two different stimuli. Spontaneous images were obtained both before each stimulation (control images) and then following each (experimental images). The experimental images were obtained under two conditions: sitting up in a lighted room, and then reclining supine on a couch in a darkened room. The six sets of images that each *S* thus provided were objectively examined for the degree to which they reflected the influence of the subliminal stimuli. To accomplish this, an objective check-list was prepared (before the data were collected), which exhaustively describes the stimulus. It was applied to the data by three judges who remained unaware of both the nature of the experiment and of the source of any of the images—they were "blind" judges. The predictions were that the experimental images would obtain higher check-list scores than the control images, and that those images obtained under the supine-dark condition would score highest of all. The results emerged in this predicted direction and were statistically significant.

The *Ss* were asked to submit any dreams they had the night of the sessions. Fourteen dreams were submitted. In addition to checklisting them, seven experienced judges blindly matched (*i.e.*, sorted) them in a paired-choice procedure. The checklisting came out in the expected direction, and all seven judges sorted the dreams better than chance (30 hits and 19 misses).[3]

We therefore concluded from this experiment that subliminal visual stimulation may influence subsequent dreams and images, that the supine-dark recovery condition had an enhancing effect on the emergence of subliminal stimuli into imagery, and that there was evidence (since one of the stimuli was the Rubin double-profile figure) for assuming that the figure-ground effect became fluid or was eliminated during subliminal registration. Encouraged by these positive results, the present experiment continued along the same lines but made further modifications in the design. Most important of all, it abandoned the quasi-clinical technique, dealt with *Ss* as a group, and strove for a more complete balancing of conditions and influences. One of its important goals was to control any possible influence by the experimenter himself who, since he knew which stimulus was

[3] This result is statistically significant at only the 0.20 level of confidence. However, the fact that all seven judges performed at a better than chance level lends additional support to this finding.

being used and was in contact with *S* while he produced his images, may unwittingly have influenced the imagery.

In addition, a number of strategies of handling the data were explored in the present experiment. Each of them was objective and precisely controlled, and was directed towards testing a basic proposition centering on the validity of the subliminal effect. The proposition: *Exposure of a figured visual stimulus at a level beyond awareness (i.e., where there is no possibility of conscious perception and report to even a fragmentary degree) will be followed by the production of images and dreams which reflect, both directly and in transformed ways, the influence of the stimulus, its meanings and forms.*

The experiment is presented in two parts: first, methods and rationales of collecting the data; and second, methods, rationales, and results of appraising the data.

COLLECTION OF THE DATA

Subjects: The *S*s were 16 students: ten men and six women about 20 years of age, seniors in the graphic arts department of a school of design. They were chosen not only because of their ability to draw which helped overcome the hurdle of making graphic representations of images and dreams, but also because of the possibility that artists, with their experience in free and fanciful imagery, might more conspicuously show the effects of subliminal stimulation.

Stimuli and experimental conditions: The experiment was conducted in a moderate-sized classroom which was dimmed by turning out the lights and partially shading its windows. Each *S* sat and worked alone at a drawing table. During the presentation of the stimuli, *S*s arrayed themselves in a straight row across the front wall of the room and faced the rear of the room. They were about 20 feet from the rear white wall upon which the stimuli were exposed.

FIG. 1. The Rubin[4] double-profile figure: the *Figure* stimulus.

The stimuli were exposed by means of an SVE slide-projector, attached to which was a Rapax camera shutter which permitted exposures varying from 1/200 second to 1 second. It projected an area about two square feet. By means of pre-testing, it was found that an exposure of 1/100 second, slightly out of focus, and at a constant (but unmeasured) illumination, gave an adequately invisible exposure. This setting was such that *the experimenter himself could not detect whether he was exposing the figured slide or the completely blank slide.* Threshold-determining procedures were conducted after the main procedures (necessarily so), and they attested to the fact that the exposure level under the specific experimental conditions assured that the stimuli were truly subliminal (see below, pp. 321–323).

The figured stimulus (*Figure* or *F*) consisted of a lightly drawn, thin line-drawing of the Rubin *figure-ground profile-reversal* figure, shown in Figure 1. The blank stimu-

[4] This figure was copied from Hebb (7, p. 20). One major change has been made: instead of a square frame, the profiles are enclosed in a circular frame in order to contrast it with the *Blank* which consists of a square frame of light.

lus (*Blank* or *B*) consisted of a square frame of light. The Rubin figure, which has been used before with good results (6), is interesting, though simple, and seems more readily recovered by *Ss* in their imagery than other less interesting stimuli. An additional purpose for using it has been to explore the nature of figure-ground relationships in subliminally registered stimuli.

Experimental Design for Collecting Data: Images were produced and drawn by each *S* under three experimental conditions: 1) following instructions to image (*Control* or *C*); 2) following subliminal exposure of a blank slide (*Blank* or *B*); 3) following subliminal exposure of a figured slide (*Figure* or *F*).

A warm-up period initiated the experiment. During this period the experimenter (*E*) was able to convey to the *Ss* the best approach for them to adopt: namely, to try for a passive attitude and merely to watch for whatever mental image occurs spontaneously; and to be quick and uncritical in the drawing of it. *Ss* had a chance to have questions answered and doubts cleared up about their task. Moreover, this period enabled the setting of a suitably subdued, slightly mysterious and reverie-like atmosphere. This "regression-inducing" atmosphere, which in a sense corresponds to the clinical-like contact with *Ss* of the previous research, may be important in facilitating the phenomenon.

The warm-up period was followed by the *Control* condition. Its main function was to provide examples of the kinds of images and drawings these particular *Ss* give spontaneously. These images then served as a base against which were compared those images produced under the subsequent two conditions of subliminal stimulation.

The *Blank* and *Figure* conditions were balanced off against each other so that each *S*, during the course of two separate sessions, participated in both. This was achieved as follows: following the *Control* condition *Ss* were divided randomly into two equal groups; one group had the *Blank* condition to begin with (*i.e.*, during session I) while the second had the *Figure* condition; later on (session II), the second group had the *Blank* and the first, the *Figure* condition. To minimize the persisting effects of stimulation, five weeks intervened between the two sessions. Every effort was made to duplicate the procedure of the first session during the second. *Ss* were requested, at the end of each of the two experimental sessions, to record and submit the dreams they might have that night.

A third session ended the collecting of the data. It consisted mainly of a determination of the thresholds for the stimuli. In the case of the figured stimulus (*F*), two thresholds were located: 1) the point at which a "face" or "faces" was recognized; and 2) the point where *S* grasped its reversible, figure-ground characteristic. The threshold for the blank stimulus was the point where *S* realized that there was no figure being exposed. To provide further assurance that the figure was exposed at a subliminal level, a discrimination procedure was then carried out. Ten exposures at the experimental rate (1/100 second) of the *Figure* and *Blank* intermixed in a random order were presented, and *S* was required to say or guess after each presentation whether it was the *F* or the *B*. Only 13 of 16 *Ss* participated in this final phase of the experiment.

Throughout all three sessions, *S* remained completely anonymous, identifying himself by means of an arbitrarily assigned code-number.

Experimental Conduct in Detail: The experiment was conducted in three one-hour sessions. The following are the procedural steps, excerpts of the instructions given, and some description of *Ss'* behavior and the way the procedures fared.

Session I.

Step 1, The warm-up:

The initial session began with the warm-

up period. *E* introduced the research with the following remarks:

> "You are being asked to participate in a psychological experiment on imaging or imagining. Let me assure you, and I'll be saying this again: this has nothing at all to do with your training program nor any connection with School. This is in no way a test of you either individually or as a group. You will each remain completely anonymous.
>
> "This is part of a study of the kinds of mental images people get. We've chosen you for subjects, because, being art students, you are more likely to get pictorial images and, moreover, you'll probably be able to draw them easily.
>
> "The main thing you will be asked to do is: to shut your eyes; to relax; and to let an image come to mind; and then, when one does, to draw it and label it. Try to relax as much as possible and not work too hard at it. Just see if a simple picture comes into your mind; and when one does, look at it so to speak with your mind's eye and then draw it. The drawings should be quick and as simple as possible. Try not to use much critical judgment on it, it needn't be a *good* drawing. Remember, this is not a test of drawing ability—in fact, it's not a test of any kind; just relax and don't worry about your performance. When the drawing is finished, don't tamper with it; don't pretty it up, but just label it and its parts."

A brief question period followed in which *E* again stressed relaxation, passivity, and a "non-voluntary" attitude. *Ss* seemed at this point to have already become intensely involved in the experiment and also appeared a little awed and anxious. They worked in complete silence with little moving or fidgeting.

To obtain the warm-up images, *E* said:

> "Now please shut your eyes. Relax, and then see what image comes to mind. When there is an image, open your eyes and draw it. Then label it, comment on it, and number it. After that, shut your eyes and start again. Please do this for at least five times; that is, try to get a minimum of five images. When you've done five, look up."

One individual soon complained quietly but anxiously that he was not getting any images, and was reassured by *E*. After ten minutes, *E* interrupted the warm-up (only one or two *Ss* were finished) with the following comments:

> "Fine. Now I want to get some idea of how you are doing. Do you find that you're drawing objects that you've seen recently? Like things or people in this room, or things at home, or what you've seen in the streets? Try to avoid that kind of thing by not thinking voluntarily of anything specifically. Just let whatever comes into your mind come. Be passive, and wait for something to come, by itself, so to speak."

One *S* made the point that the same image kept coming up again and again and asked whether he should simply draw it over and over. *E* advised that he try to avoid this and pointed out that this might be the only really active thing they should do. Another *S* pointed out that very small stimuli seemed to influence his imagery, for example, when someone coughed. *E* said this would probably be true but that the students should try as much as possible to shut out their surrounding world. *E* then asked the *Ss* to write down how they were finding the task.

Step 2, the control images:

E went on to the Control procedure with the following:

> "Fine, let's do another five images now. Begin on a fresh page and start numbering from '1'. When you've done five, look up. If there is still time and you want to do more, go ahead. But do at least five. Shut your eyes and begin."

It was 15 minutes before all *Ss* had finished. Some *Ss* finished earlier and occupied themselves with sketching and doodling (*E* collected these drawings at the end of the session).

Step 3, the tachistoscopic presentations:

Next came the subliminal stimulation. *E* said the following:

> "Fine. You can stop relaxing for a moment. Now, for the next part I want you each to have a code number so that I can divide you into groups. Would you please number off beginning in the front row." (The *Ss* numbered off.)

"Now, please remember your number because it will be a kind of identification mark. Your anonymity will still be preserved while there will be some way of identifying the various work you do. Please write your number on the cover of your pad, and then memorize it. Number all of the work you have done so far."

"Now, I'm going to flash something on the wall." *E* pointed out the place where the exposure would occur. "You are to watch it very carefully. I will flash it on for only an extremely brief period and probably no one of you will see anything at all. The flash will be too quick. But please watch it closely anyway."

"Now, will all of you whose code number is an *even number* please rise and come to the front of the room." (Half of the *Ss* arrayed themselves along the wall. *E* then asked all *Ss* to shut their eyes and described how he was going to flash the stimulus.) "I will go 1 2 3, in about that rhythm, and then I'll flash it."

"Now, will only those people who are standing, please open your eyes. The rest keep them shut and covered. Only the even numbered people open your eyes and look up at the wall. Here we go, 1 2 3!"

E then exposed the *double-profile* figure. The *Ss*, with a slight murmur of what appeared to be perplexity, returned to their seats, and the remaining *Ss* took their place. *E* repeated the instructions and then exposed the *Blank* slide.

It should be noted that the *Ss* who were sitting and supposed not to be watching the exposure, had their backs to it—additional assurance that they did not cheat and look at it.

E continued by soliciting another set of images. "Would you all shut your eyes. Now, see what images come to mind and draw them. Do it just as you did before; relax and see what image comes to mind, then draw it and label it and comment on it. Just as we've been doing all along. Please make sure you start on a new sheet and begin numbering from '1.' When you've done five, look up. If there's time and you wish to do more, go ahead."

Everyone returned to work in the same cooperative spirit as they did earlier, and within about 15 minutes all had finished.

Step 4, the dream instruction:

After *Ss* had completed their images *E* gave the dream suggestion in the following way:

"Thanks for your cooperation. There's one more thing. If you should happen to have a dream tonight, please make a big effort to remember it. Be sure and remember your dream. It might help to remember it if you take this pad that I will give each one of you and keep it beside your bed with a pencil. If you should happen to wake up after your dream and you feel like it, write it down and draw it—that is, draw all parts of the dream that are pictorial, and you can make more than one drawing if you wish. Otherwise, if you remember it in the morning, write it down, and make sketches of the pictorial parts. Finally, if you care to, write down anything about the dream that seems important—whether it's a sort of dream that you usually have, whether it has some particular meaning to you, what the different parts might mean, etc." (After some questions, *E* arranged to collect the dreams on the following day.)

Session II.

The second session took place after an interval of five weeks. The procedure duplicated the first session except that the warm-up period was omitted and was replaced with some informal discussion of problems brought up by *Ss*, *e.g.* the difficulties of labeling images.

E repeated, with only an occasional modification of wording, the original instructions, and began by soliciting *Control* images. The same amount of time, about 15 minutes, was given to obtaining *Control* images.

Then *E* called the even-numbered *S* to the front and exposed the *Blank* slide to them. Next he exposed the *Figure* to the odd-numbered *Ss*. The last series of images was completed in a little over 15 minutes. Finally, the dream suggestion was given.

Session III.

The final session occurred one week after the second. Only 13 *Ss* were present. The

main procedure was the threshold determinations.

E began by explaining the threshold procedures. He pointed out that the purpose of the procedure was to determine how long the slides had to be exposed before the *Ss* could accurately see what was on them. *E* stated that he would show each slide eight times, each time for a little longer, and that each time the *Ss* were to draw what they see.

All *Ss* arrayed themselves at the front of the room. *E* began with the *Figure*[5]. It was flashed eight times in the following sequence: 1) 1/100 sec.; 2) 1/100 sec.; 3) 1/50 sec.; 4) 1/25 sec.; 5) 1/10 sec.; 6) 1/5 sec.; 7) 1/2 sec.; 8) 1 full second. Just before the final exposure *E* asked: "Would you note down if you see anything unique about this figure." After the final exposure, *E* put the slide on for 10 sec. and instructed the *Ss* to examine it for "something interesting." After this *E* pointed out what it was—the reversible double-profile.

Then this procedure was repeated with the *Blank*. At the end *E* asked each *S* to indicate at what point he became quite sure that the slide was a blank one, "exactly when did you realize there was nothing on it?"

Next *E* said he was going to flash, 10 times at the very rapid rate, either the figured or the blank slide and *Ss* were to guess after each which one was flashed, the blank one or the one with the figure on it. The slides were exposed in the following order: *F, F, B, F, B, B, B, F, F, B.*

[5] A question may be raised concerning the level of dark-adaptation of *Ss* during the threshold determining procedure: was it the same as during the experimental sessions? The room was in approximately the same dim state during all three sessions (no measurements were taken). During the first experimental session, the first subliminal exposure occurred after *Ss* had been in the room approximately half an hour. During the second, the interval was approximately 25 minutes. During the threshold determining session this interval was probably 15 minutes. Whether these differences could have affected the thresholds substantially enough to cast doubt on the results is a moot question.

APPRAISAL OF THE DATA

THRESHOLD RESULTS

The threshold data were examined first in order to deal with the crucial problem: What did the *Ss* actually *see*? Were the stimuli truly and wholly subliminal?

Threshold of the Figure: During the eight successive presentations of the double-profile figure (the first two at 1/100 second and then each exposure a step longer in duration), no *S* recognized its content until the seventh (½ second) exposure. Of the 13 *Ss* who participated in the threshold procedures, only four were able to do so at this point. Two others recognized the stimulus at 1 full second, the final exposure in the series, while the remaining seven *Ss* failed to do so even then. Only three of the six *Ss* who were able to identify the content of the *Figure* grasped the nature of the stimulus and reported not one but two faces.

These data certainly indicate how difficult it was for *Ss* to identify the stimulus even with a relatively long tachistoscopic exposure. However, the question may be raised as to whether there was partial recognition of the stimulus, *i.e.*, perception of parts of it that might have gone on to influence the imagery and dreams. The first two exposures of the series are of special pertinence to this question, since they duplicated the 1/100 second exposure conditions of the experiment itself.

Three of the 13 *Ss* drew nothing following the two 1/100 second exposures of both the *Figure* and the *Blank*, merely writing "nothing" each of the four times (one of them wrote "nothing but black and white tones"). The remaining ten *Ss* made drawings following these exposures. These drawings are all presented in Figure 2, which gives some indication of the extent of their "perception" of the stimuli. Inspection of the drawings in Figure 2 reveals that no

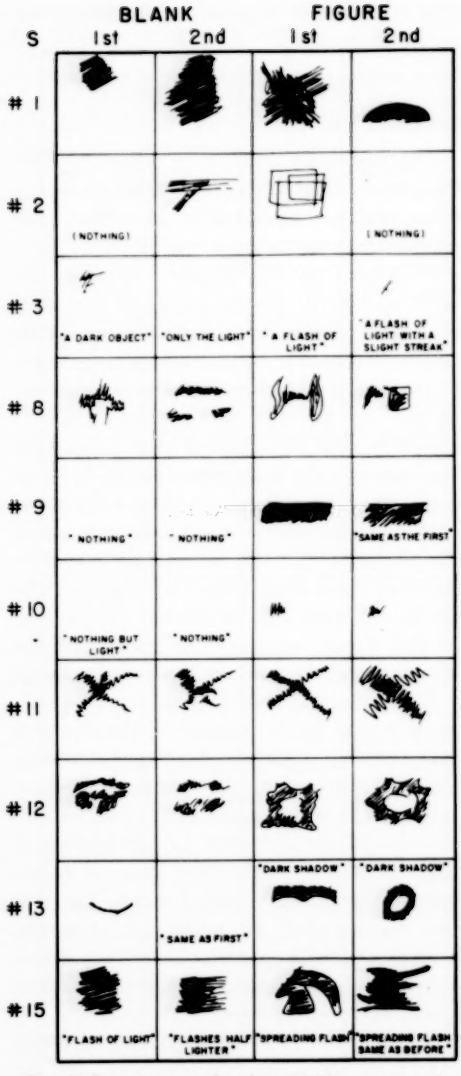

FIG. 2. Drawings made after 1/100 exposures in the threshold-determination procedure.

more than four *Ss* saw something that might, albeit remotely, be related to the double-profile figure. Two drew circles, another drew two vague masses joined like an "H," while the last drew a form which he labelled "spreading flash." However, the two *Ss* who apparently "saw" the circle of the *Figure* also drew round figures following the *Blank*. Evidently they were reporting not the actual *Figure* but the growth of the flash of the tachistoscopic exposure. The same may or may not be true of *S* №15 whose "spreading flash" may be based on the profile line of the *Figure* and whose drawings following the *Blank* are more formless. However, the fact that this *S* achieved a chance score (5 out of 10) on the discrimination procedure (see below, Table 12) suggests that his perception was only of the flash, and that his drawing was primarily fortuitous.

S №8's performance, however, seems less controvertible. The fact that he scored 9 out of 10 on the discrimination procedure (see Table 12) lends weight to his drawing of two interconnected figures and indicates that this *S* may well have been able to secure some appreciable amount of information from the exposure of the *Figure*.

Threshold of the Blank: It is difficult to evaluate the threshold data on the *Blank*. Most *Ss* reported seeing "nothing" right from the start of the eight successive exposures, but they did so on the *Figure* also. Their report was not one of seeing a positive something, but of not seeing anything. After a certain level of exposure was reached, however, they began to realize that "nothing" was really there. At this point, some *Ss* spontaneously made a note of this. Immediately following the last exposure, *E* asked *Ss* to note down at what point they thought there was a blank being exposed. Naturally, these data cannot be highly reliable since they relied on *Ss*' recall and trustworthiness.

Two *Ss* still gave evidence of seeing "something" at the final exposure of a full second. Two others reported "nothing" for the first time at 1 full second; one *S* so reported at ½; seven claimed it at ⅕th; and one *S* reported it at 1/10th. However, no *S* reported seeing the "blank" at less than the 1/10 second exposure, the fifth exposure of the series. We may therefore conclude that the *Blank* also afforded *Ss* no dis-

tinctive clue regarding its nature during the experimental exposures.

Discrimination threshold: The final and most stringent test of the subliminality of the two stimuli was the final procedure in which ten exposures at 1/100 second were given, and *S* had merely to write down which was flashed, the *Figure* or the *Blank*; if they were not sure they were required to guess. Half the exposures contained the *Figure*, half were *Blank*, and their order was random.

No *S* was correct on all ten trials, but one (*S* #8) was correct on nine. Two *Ss* (#4 and #13) got eight correct hits[6], four got seven, one got six, four performed at chance (five hits), and one was below chance with three hits. Altogether, the *Ss* got a total of 82 hits where 65 is chance[7] and thus performed significantly better than chance. However, a trial-by-trial analysis indicated that their ability to discriminate *Figure* from *Blank* improved as the sequence of ten exposures proceeded. On trials 1 and 2 the *Ss* did poorer than chance, while on trials 3 to 10 their performance was better than chance. Table 1 presents these results, and also shows that *Ss* made more errors on *F* than on *B*, preferring to guess "Blank" or most often seeing "nothing." They responded "Blank" 61.9 per cent of the time, and "Figure" 38.1 per cent.

The fact that the *Ss* received only two subliminal exposures during the experiment proper, and the fact that the first two trials of the above threshold test were well within the range of chance, gives support to our assumption that not only were the two stimuli presented well below the level of recognition threshold, but that the level was low enough to prevent *Ss* from perceiving any part of the stimulus. The threshold test shows, incidentally, that had we continued to present the stimuli for more than two consecutive exposures we might have established a summation effect with the consequent reception by the *Ss* of some cues and information about the stimulus. However, we can take assurance from these data, together with the drawings in Figure 2, that the stimuli presented during the experiment were truly subliminal and afforded the *Ss* no appreciable amount of cues and information about the stimulus.

TABLE 1

Percentage of Ss Successfully Discriminating Figure and Blank in Each of the Ten Trials (50% is Chance Expectancy)

Trials									
1 F	2 F	3 B	4 F	5 B	6 B	7 B	8 F	9 F	10 B
38%	31%	85%	77%	85%	77%	54%	54%	61%	69%

METHODS OF ASSESSING THE IMAGES AND RESULTS

The main data of this experiment were the images[8] and the reported dreams. Each *S* provided images under three experimental conditions: *F*, *B*, and *C* (*C*1 and *C*2). In addition, ten dreams were secured; four following *F* and six following *B*. These dreams will be considered in a later section of this report. The present section deals with analysis of the images.

Each of the analyses was designed to reveal whether the images show the influence of the subliminal stimulation. Two different kinds of analyses were used: one in which the images were objectively ex-

[6] It is instructive, at this point, to consult Table 12 which shows the relative ranking of the 13 *Ss* on the degree of "emergence"—the extent to which they displayed the subliminal effect and so contributed to the positive outcome of this study. If it was perceptual information that brought about the effect, then these three *Ss* should rank high among the "emergers." Table 12 shows that, except for *S* #8 who ranks fourth, these *Ss* rank quite low. *Ss* #4 and #13 provided data that regularly went in the *opposite* direction (see Tables 2, 7, and 9). If these three *Ss* are excluded, the results of the experiment actually improve. On the other hand, the best three *Ss*—the highest "emergers"—obtained the lowest discrimination scores (3, 5, and 5 out of 10, in that order). These findings are considered below on p. 336 and pp. 338–339.

[7] Chi-square is 4.45, 1 d.f., $p = 0.05$.

[8] "Images" refers to *S*'s drawings, with the comments made on them.

amined for the presence of distinctive elements of the double-profile stimulus; the second in which experienced and trained judges blindly matched the data to the three experimental conditions. The latter analysis will be presented first.

Sorting analyses: The question asked by this kind of analysis is, simply, whether experienced and trained judges[9] can detect evidence of the subliminal stimuli in the images? A graduated series of four matching or sorting procedures was applied. They varied from a "free" sorting, in which the most experienced judge (CF, one of the writers) was required to assign each image to either *F*, *B*, or *C*, *i.e.*, to decide whether it showed the influence of the double-profile, the blank, or neither; to a constrained sorting in which a large group of judges was shown two sets of images from one *S*, one actually from *F* and the other from *B*, and asked to match them to *F* or *B*. These procedures and their results will be presented in the order they were administered; from the freest to the most constrained.

The first step in preparing the images for analysis was to remove (by actual excision to prevent any possible cues) all identifying marks from them, and to code them. A private coding system was devised and each image's code was written lightly in pencil on the back of the drawing.

Sorting I: An expert's free sorting. CF (an expert in the sense of having had long experience with the influence of subliminal stimulation upon imagery and dreams, and particularly with the influence of the double-profile figure in this way) served as judge in the first sorting. The total output of images numbering 385[10] was mixed and shuffled thoroughly and presented for him to sort into three piles: *F*s, *B*s, and *C*s. (This was, incidentally, his first contact of any sort with these data.)

The pile of images consisted of 95 *F*s (24.7 per cent of the total), 107 *B*s (27.8 per cent) and 183 *C*s (47.5 per cent). For the purpose of this analysis, which uses the statistical method for matching data presented by Mosteller and Bush (11), this is called the *target deck*. CF's sorting is called the *matching deck*. He was told the approximate composition of the target deck (percentage of *F*s, *B*s and *C*s) but was not required to make his matching deck correspond exactly to that distribution.

In his matching deck this judge selected 92 images which he labelled *F*, 80 *B*s and 213 *C*s. He was found to be correct in 180 of these choices; achieving 28 hits on *F*, 31 hits on *B*, and 121 hits on *C*. According to the Mosteller-Bush technique the overall number of hits expected by chance alone was 146.2; the difference between this and the 180 hits yields a *z-score* of 3.81 which is significantly beyond the 0.001 level. Therefore, we can safely conclude that CF was able to sort the images significantly better than chance.

Which category was he most successful in matching? In his choice of *F* he achieved 28 hits or 30.4 per cent success while the target deck consisted of 24.7 per cent *F*s; in *B* he hit 31 times or 38.8 per cent while the target deck consisted of 27.8 per cent *B*s; in *C* he achieved a hit percentage of 56.8 and the target deck was composed of 47.5 per cent *C*s. In all three categories he exceeded the target deck; his margin being 5.7 per cent in *F*, 9.0 in *B*, and 9.3 in *C*. This shows that he was most successful in matching *C*s and *B*s, and least successful in *F*s.

Sorting II: Free sorting S by S. The second sorting was similar to the first except that, instead of dealing with the entire sample of images, the judge dealt with the total output of each of the 16 *S*s one at a time. Moreover, he was told in each case what the exact distribution of *F*s, *B*s, and

[9] Their experience and training was acquired before this experiment took place, eliminating possible contamination by the present data.

[10] This number is inflated by images from *S*s who participated in only one of the sessions and hence are not among the 16 *S*s whose data were treated by the later analyses.

Cs was, and instructed to make his sorting correspond exactly to that.

Seven judges were used in this sorting (included among them was CF). The other judges had some personal experience with experiments on subliminal perception at the Research Center for Mental Health, New York University; each was familiar with Fisher's previous work, and, incidentally, each was personally convinced of the validity of the phenomenon.

The present analysis pools the results from the seven judges on the 16 cases. The Mosteller-Bush technique for assessing the significance of matching data was again applied. Table 2 presents the results and analysis of the matching. It shows that the overall matching performance of the seven judges on all 16 cases was better than chance beyond the 0.001 level of statistical significance. A case-by-case examination reveals that ten of the 16 cases were matched better than chance, six of them at a level beyond 0.05 significance. Only two cases (*Ss* #4 and #13) were matched significantly poorer than chance.

The target deck was composed of 26.8 per cent *Fs*, 24.8 *Bs*, and 48.4 *Cs*. The matching deck of the seven judges was composed of 19.1 per cent *Fs*, 20.1 *Bs*, and 60.8 *Cs*. In other words, the judges scored more hits on *C* than they did on either *F* or *B*. This means that the major source of misses was failure to distinguish between *F* and *B*—the judges were better able to discriminate between *Cs* and *F-Bs*. Nevertheless, this does not mean that they did not score significantly on *F* and *B*. Table 3 shows the number of hits on each condition that can be expected by chance alone and compares it with the actual number of hits on each. It reveals that each condition was matched better than expected by chance. Interestingly enough (and consistent with the other matchings), there are more hits on *B* than on *F* or *C*.

A judge-by-judge breakdown reveals that five of the seven scored more hits on *Figure* than would be expected by chance, while all seven judges scored more hits on *Blank* than would be expected by chance. Table 4 shows these results.

TABLE 2

Mosteller-Bush Matching Analysis of the Number of Hits (Correct Matchings) by the Seven Judges in Sorting II

Subjects	N hits	$\bar{m}$ (N hits expected by chance)	s^2	z
#1	83	55.37	34.44	4.61*
#2	57	49.70	36.68	1.12
#3	85	44.31	28.56	7.53*
#4	37	53.69	32.27	(3.02)†
#5	59	48.23	29.33	1.90‡
#6	44	52.08	28.49	(1.61)§
#7	49	53.20	30.10	(0.86)
#8	75	55.37	34.44	3.25*
#9	49	52.50	29.96	(0.73)
#10	62	52.50	29.96	1.65§
#11	45	37.80	23.66	1.50
#12	74	51.66	19.04	5.01*
#13	35	46.06	30.52	(2.09)‡
#14	61	52.50	29.96	1.46
#15	49	52.50	29.96	(0.73)
#16	75	52.50	29.96	4.02*
Total	939	809.97	477.33	5.89*

* = $p < 0.001$
† = $p < 0.01$
‡ = $p < 0.05$
§ = $p < 0.1$

TABLE 3

Percentage Total Number of Hits by the Seven Judges Compared with the Percentage Expected by Chance in Sorting II

	Figure	*Blank*	*Control*
Observed	30.8	35.1	54.4
Expected	26.8	24.8	48.4
Difference	4.0	10.3	6.0

Sorting III: S by S with images arranged in sets. The next sorting required judges to single out the *Fs* and *Bs* from the four sets of images produced by each of the 16 *Ss*. Each judge was shown each *S*'s four sets of images; each set was in the original order, but the sets were unlabelled and randomly arranged; and the judge had to determine

TABLE 4

Total Number of Hits on Figure and Blank Compared with the Number Expected by Chance in Sorting II

Judges	Guessing *Figure*		Guessing *Blank*	
	Observed	Expected	Observed	Expected
CF	28	22	27	19
AE	27	22	22	19
DS	21	22	25	19
RH	28	22	26	19
FP	27	22	33	19
GK	20	22	25	19
LG	28	22	31	19
Total	179	154	189	133
	$\chi^2 = 4.06$, $p = <0.02$		$\chi^2 = 23.6$, $p = <0.001$	

which set was *F*, which was *B*, and which two were *C* (*C*1 and *C*2).

This sorting was executed in the following way. Each *S*'s images were arranged into four sets or columns, mounted and installed on the walls of the corridors at the Research Center for Mental Health[11]. Each set or column was randomly numbered from 1 to 4 and each *S*'s total output was identified by a "block" number (1 to 16). Members of the staff (faculty and graduate students) were invited to participate as judges and the task was set in the form of a "game." In order to enhance their motivation, a prize of five dollars was offered for the best performance. Each judge received the following instruction sheet along with a picture of the double-profile and a set of answer sheets.

> You may have noticed the "art exhibit." Even though each drawing is the work of a serious art student, it is not hanging to be admired but to be judged. Each drawing is the rendering of a mental picture that presumably came spontaneously into the artist's mind while he was a subject in a Poetzl-type experiment.
>
> Each block of drawings is the total production of one subject. You will see that there are four columns in each block and they are numbered #1, #2, #3, and #4. The four columns represent the experimental conditions. One of them is associated with a subliminal exposure of the Rubin double-profile figure, one is associated with a subliminal exposure of a blank slide, and the two remaining ones are drawings made at the outset of each of the sessions.
>
> You are invited to be a judge in this experiment and to "play the game" of guessing which column of drawings from each block followed the two main experimental conditions; the *Figure* and the *Blank* conditions. The columns are of course randomly arranged in the blocks. However the order in which each series of drawings was produced is intact—they begin from the top of each column.
>
> The Rubin figure—a copy of it is attached—was projected within a rectangular patch of light that the trachistoscope projects on a screen. The blank slide consisted of just the rectangular patch of light. Exposure time was 1/100th of a second, and the lens was in a half-blurred position. The experimental question is: did the subliminal stimulation have an effect upon the spontaneous imagery?
>
> Your task is twofold: 1) To select the column that followed the *Figure* condition; and 2) to select the column that followed the *Blank*. Please do these two tasks separately and as independently as you can. Begin with the *Figure* condition and go through all 16 blocks of drawings. Then, afterwards, repeat the procedure for the *Blank* condition.
>
> Please "play the game" as follows:
>
> 1) Pretend this is a gambling situation where your choices are registered in the form of bets. The size of your bet should represent the degree of confidence you feel about your choice, and the distribution of your bets among the four columns in each block should result in a rank-ordering of the four columns.
>
> 2) For each block of drawings you have 10 (ten) units or points (or matchsticks or dollars) to bet with. You must use all 10 of them in each case.
>
> 3) You are free to distribute your 10 units any way you please. For example, if you want to choose column #3 of a block, you can, say, bet 5 units on it; then, if column #1 also seems a good bet, you might bet 3 units on it; finally, you might want to bet the remaining 2 units on column #2. In this way you have distributed all 10 of your units in each block. Please try to have the distribution of your bets result in a rank-ordering of the four columns with as few ties as possible. Try to make each bet accurately reflect the degree of confidence you have in each of your various choices. The distribution of your

[11] We wish to thank Drs. Robert R. Holt and George S. Klein and their co-workers for their assistance and cooperation in this phase of the research.

bets among the columns in each block will be used in the experiment as an index of confidence.

Incidentally, the experiment will also assume that you worked independently, so please do. When all of the betting sheets are in, the "exhibit" will stay up for awhile and the columns will be identified. This will permit discussion and further examination. Nobody should be able to say "I told you so."

Thirteen judges participated in this matching procedure. All judges seemed to apply themselves seriously to the task and many of them spent a good deal of time carefully studying the images and weighing their choices.

The data were processed by adding each judge's score on the four sets of images on all 16 cases for his *F* and *B* selections. Since there were 10 points distributed in each case, a total of 160 points was assigned by each judge for each matching. Therefore, a perfectly nondiscriminating performance should assign 40 points to each of the 4 sets of images. If, in matching *Figure*, a judge scored 100 points on the *F* set and 20 points on each of the other three, then his performance was in the "correct" direction, he clearly discriminated the *F* images. In order to transform these data, 40 (chance score) was subtracted from each total, yielding an algebraic index of his score, a plus score being better and a minus poorer than chance.

Table 5 presents a summary of these findings. The results show that judges were generally successful in selecting the true *Figures* and the true *Blanks*. Eleven of the 14 judges achieved a plus score on *F* when they were guessing *Figure*. Even though most of them achieved a very low score, the fact that these scores are so consistently positive makes their performance statistically significant: the judges achieved an average score of +4.15, which is significantly greater than zero at the 0.05 level

TABLE 5

*Total Confidence Score of Each Judge in Guessing Figure and Blank on the Four Sets of Images: Sorting III**

Judges	Guessing *Figure*					Guessing *Blank*				
	F	B	C1	C2	N hits	*B*	F	C1	C2	N hits
CF†	+24	−11	−4	−9	9½	+14	−20	+1	+5	6
RH	+6	−17	+1	+10	4	+21	0	−8	−13	7
HL	+6	−12	−6	+12	5	+23	+1	−4	−20	7
SB	+5	+1	−12	+6	6½	+20	+7	−19	−8	10½
LC	+4	+7	+3	−14	4	+1	+3	−13	+9	4
FP	+4	−13	−3	+12	3½	+25	+16	−15	−26	7½
HK	+2	−10	−12	+10	4	+25	+1	−10	−16	8
PL	+2	0	−12	+10	4	+14	+6	−4	−16	5
AP	+1	−3	−2	+4	5½	+13	−2	−15	+4	7
RS	+1	+5	0	−6	4	+13	−3	−1	−9	7
GK	+1	−5	−3	+8	6	+3	−4	+11	−10	4½
DS	0	+12	+4	+8	4	+4	+15	−10	−9	5
AW	−2	+3	+3	−4	2½	+13	−3	+1	−11	7
Mean	+4.15	−5.15	−3.31	+4.31	4.81	+14.54	+1.31	−6.62	−9.23	6.58
SD	6.17	7.54	5.54	9.37	1.70	7.83	8.74	7.99	9.68	1.65
t from zero	2.33	2.36	2.07	1.59	1.65‡	6.43	0.52	2.86	3.29	5.38‡
p	<0.05	<0.05	<0.05	—	—	<0.001	—	<0.02	<0.01	<0.001

* Chance score of 40 is subtracted from each score yielding an algebraic index of performance: a plus score is superior to chance, a negative score is inferior to chance. Also included are each judge's number of hits (½ point for each tied hit).

† The most experienced judge.

‡ From 4, the chance number of hits.

TABLE 6

Number of Cases Which Judges, on the Average, Guessed to be Figure and Blank

	Guessing *Figure*				Guessing *Blank*			
	F	B	C1	C2	B	F	C1	C2
Observed	7	3	1	5	8	3	4	1
Expected	4	4	4	4	4	4	4	4
$\frac{(O - E)^2}{E}$	2.25	0.25	2.25	0.25	4.00	0.25	0	2.25
	$\chi^2 = 5.00$, $p = <0.10$				$\chi^2 = 6.50$, $p = <0.05$			

TABLE 7

CF's Performance on Guessing Figure (Sorting III). Each Entry is the Confidence Score Assigned to That Set of Images

Subject	F	B	C1	C2
#1	5	0	1	4
#2	1	2	3	4
#3	5	0	0	5
#4	1	6	3	0
#5	3	1	5	1
#6	7	0	2	1
#7	4	0	6	0
#8	7	2	0	1
#9	1	5	1	3
#10	4	2	1	3
#11	4	2	4	0
#12	7	1	0	2
#13	3	2	3	2
#14	4	2	3	1
#15	4	1	2	3
#16	4	3	2	1
Mean	4.00	1.81	2.25	1.94

Analysis of Variance

Source	Sum of squares	Degrees of freedom	Variance	F-ratio	p
Conditions	49.63	3	16.54	5.32	<0.01
Residual	186.37	60	3.11		

($t = 2.33$, d.f. 12). On *B* and *C1* their score is significantly negative. However, on *C2* their score is positive and slightly greater than on *F*; +4.38. However, because of the great variability, this value is not significant ($t = 1.59$).

The judges' ability to correctly identify the *Blanks* is highly significant and unequivocal. On *B* no judge failed to get a positive score, and their average of +14.54 is highly significant.

It is especially noteworthy how far superior was CF's achievement to the other judges, but only in guessing *Figure*—on guessing *Blank* his performance is average. His experience had been exclusively in detecting the influence of the double-profile figure and not in assessing the influence of a blank stimulus, and this seemingly accounts for his differential superiority. This suggests how important experience may be in detecting the influence of a subliminal stimulus.

Each judge's data sheet was also scored for the number of hits (*i.e.*, the number of instances in which he assigned the highest score to the correct set of images). The total number of hits is also shown in Table 5. Since there were 16 cases and four conditions, a chance number of hits would be 4. Five of the judges scored more than 4 hits in guessing *Figure*, while six scored 4, and only two scored less than that. The average number of hits was only 4.81, which falls short of statistical significance ($t = 1.65$). However, in guessing *Blank*, the judges scored significantly more hits than would be accounted for by chance alone (an average of 6.58, $t = 5.48$).

Table 6 presents a summary of the number of cases in which the judges, on the average, assigned the highest score on *F* and on *B* (*i.e.*, guessed it to be *Figure* or *Blank*). Since there were 16 cases (*Ss*) and four conditions, a perfectly chance performance is to score 4 hits in each condition. In guessing both *Figure* and *Blank* the judges, on the average, hit correctly most often (7 hits on *F* and 8 on *B*). A chi-square analysis reveals, however, that only the latter achieves a satisfactory level of significance.

Only CF proved able to guess *Figure* at a level well above significance. Table 7 presents a breakdown of his performance. Counting ties as ½ he guessed correctly in

9½ of the 16 cases, guessing 2 *B*s as *Figure*, 3 *C*1s, and 1½ *C*2s. This achieves a chi-square of 10.38 which is significant at beyond the 0.02 level. CF did not have difficulty discriminating *F* from *C*2, as did most of the other judges. His average confidence score on *C*2 was only 1.94, while on *F* it was 4.00; on *B* his score was 1.81, and on *C*1, 2.25. An analysis of variance shows this to be statistically significant.

Sorting IV: Paired choice of F × B. For the final sorting, the judges were presented with only *F*s and *B*s, and their task was to discriminate the one from the other.[12] This was done by removing the two *C* sets from each of the blocks of images, and requiring the judges to guess which of the two remaining sets was *F* and which was *B*.

The following instructions were distributed along with an answer sheet:

> One final task. You will observe that two of the columns in each block are now lettered in red with the letters *A* or *B*. These two columns are the *non-Control* columns, and in each case either *A* or *B* is *Figure* and the other is *Blank*. We would like you to make the rounds one last time and choose which of the two lettered columns is *Figure*. Indicate your guess in each block by betting up to *5* points on it in the appropriate space. Please make the size of your bet reflect your amount of confidence. A bet of *1* point will indicate minimal confidence, *5*, maximum.

Fifteen judges participated in this sorting. Their performance reveals a clear-cut ability to discriminate *F* from *B*. Table 8 presents the results, and shows that ten judges do better than chance (8 hits), two perform at a chance level, and three below. The mean number of hits, 9.47, is significantly greater than chance at the 0.01 level. Moreover, only three judges achieve a negative confidence score; the mean score is +14.0, significantly greater than zero at the 0.001 level. On their hits the judges show more confidence than on their misses; however, this difference fails to attain statistical significance.

TABLE 8

Number of Hits and Total Confidence Score of Each Judge in the 2-Choice F x B Task (Sorting IV)

Judges	N hits	Total Confidence Score	Average Confidence Score	
			on hits	on misses
CF	13	+34	3.4	3.3
RH	11	+23	3.3	2.6
HL	10	+15	3.1	2.7
SB	11	+19	3.6	4.0
LC	8	−2	4.5	4.7
FP	11	+30	4.3	3.4
HK	10	+18	3.8	3.3
PL	7	−7	1.9	2.2
AP	7	−3	2.6	2.3
RS	9	+12	4.1	3.6
GK	9	+11	4.2	3.9
DS	7	+2	3.6	2.5
AW	8	+8	4.0	3.0
Mean	9.47	+14.00	3.63	3.18
SD	1.74	12.24	0.67	0.21
t from 8	3.13	*t* from zero = 4.28	*t* of difference = 1.55	
p	<0.01	<0.001	—	

It is again noteworthy that CF's performance is the most superior.

The results of the four sortings may be summarized as follows. The judges were clearly able to detect differences in the images that corresponded to the experimental conditions. Moreover, it was not merely a case of distinguishing pre-tachistoscopic images from post-exposure ones, *i.e.*, *C*s from *F*-*B*s. They could also distinguish between *F*s and *B*s. However, the *F* images were matched poorest of all except by one judge, CF, who presumably revealed the benefits of a good deal of personal experience with the effects upon imagery of this particular stimulus.

[12] Had the results of sorting III already been analyzed, we would have tested, not *F* against *B*, but rather *F* against *C*2. Sorting III showed that the judges were able to discriminate the *B*s well above chance; their difficulty was in selecting *F* over *C*2. It would therefore have been useful to test their ability to separate *F* from *C*2 in this two-choice manner.

TABLE 9

Average Checklist Score of Each Image Produced Under the Four Experimental Conditions

Subject	C1	C2	B	F	Total
#1	1.2	1.4	1.6	3.4	7.6
#2	2.5	3.6	2.6	1.5	10.2
#3	1.3	2.6	1.0	1.4	6.3
#4	2.4	3.2	2.6	1.7	9.9
#5	1.8	0.6	1.0	1.2	4.6
#6	1.2	1.0	0.5	1.6	4.3
#7	2.2	1.0	2.0	1.8	7.0
#8	0.6	0.8	1.1	2.0	4.5
#9	0.6	0.9	2.2	0.6	4.3
#10	2.2	2.8	2.8	4.4	12.2
#11	3.0	2.0	1.5	4.5	11.0
#12	1.4	1.2	0.0	3.0	5.6
#13	1.8	1.0	1.2	0.7	4.7
#14	2.0	1.6	2.6	4.0	10.2
#15	1.0	2.6	1.0	2.2	6.8
#16	2.2	1.6	2.0	3.0	8.8
Mean	1.71	1.74	1.61	2.31	
SD	0.46	0.83	0.65	1.48	

Analysis of Variance

Source	Sum of Squares	D.F.	Variance	F-ratio	p
Conditions	4.85	3	1.62	2.66	<0.05
Subjects	26.91	15	1.79	2.94	<0.01
Residue (error)	27.70	45	0.61		

TABLE 10

Breakdown of Checklist Results: Average Checklist Scores Per Image on the Six Checklist Categories

Category	C1	C2	B	F
A: Content	0.87	0.75	0.94	1.31
B: Form	3.81	4.12	3.87	4.75
C: Movement	1.69	1.69	2.19	2.06
D: Number	0.37	0.37	0.44	1.19
E: Content and Form	1.00	0.87	0.94	1.44
F: Number and Position	0.12	0.50	0.31	0.87

CHECKLISTING ANALYSIS

The final analysis of the images consisted of scoring each one on the basis of an objective checklist which was designed exhaustively to describe the Rubin double-profile stimulus. This checklist was prepared in connection with the previous study (6), and is fully described in the report of that experiment. It proved successful in capturing the effects of the stimulus, subliminally exposed, upon images and dreams.

The checklist contains 30 items which refer to the properties of the double-profile figure, and is divided into six categories: A, Content; B, Form; C, Movement; D, Number; E, Content and Form; and F, Number and Position. The previous study demonstrated that this checklist technique is reliable even when performed by a scorer who knows the source of each image he is scoring.[13] Therefore, each of the images of this study was scored on the checklist by one of the writers.

The results are presented in Table 9. The average score of the *F* images was higher than each of the others. An analysis of variance was carried out to test the significance of these results, and showed that the differences between the four conditions are significant, as are the differences between the 16 *Ss*. However, only *F* is significantly superior to the others, while the remaining three conditions do not differ significantly among themselves.

Table 10 presents a breakdown of the checklist data according to the six major categories of the checklist. It shows that in one category, Movement, the *B* images achieved a higher score than did the *F* images. In all others the *F* images scored highest. This indicates that the *F* images contained more of the properties of the Rubin double-profile figure (except for the movement properties) than did the others.

SOME EXAMPLES OF THE RAW DATA

Having shown that the two sets of analyses provide support for the hypothesis underlying this experiment, it may be worthwhile at this point to present and discuss a few examples from the images. Three sets of data have been selected, each of which was more or less successfully matched by the judges, and each of which illustrates a

[13] These results are presented in Fisher and Paul (6, pp. 49–55).

FIG. 3. Images of Subject S10.

way in which the subliminal stimuli seem to have exerted an effect.

The first example, the images of S S10 shown in Figure 3, contains quite simple concrete images. The same images tend to recur in each of the four sets. However, those following the *Blank* and the *Figure* contain distinctive elements which correspond to the stimuli. A forest scene occurs in all four of the conditions. However, the last contains a new and important element: two people. Two human heads also appear in the second *F* image; heads appear also in *C*2, but there are three of them.[14] The final image of the *F* set contains overlapping circles which may be related to the overlapping components of the double-profile stimulus.

[14] Incidentally, this *S* had the *Figure* in session one. Therefore it is possible that there was some carry-over to the second session, especially to *C*2 with which this session began. The pair of hands that occurs in *C*2 may be a reflection of such a lingering effect.

CONTROL 1
CONTROL 2
BLANK
FIGURE
MOVEMENTS IN DARK SHADOWS
TWO OBJECTS LINKED
THE CORNER OF A STONE
TWO CURVED PLANES INTERLOCKED
A BACKWARD Z ANGLE TILTED OVER
THE BOTTOM OF A TROUGH OR SOMETHING ATTACHED TO A WALL
TWO FORMS FACING EACH OTHER POSSIBLY BREASTS
A V SHAPED ANGLE IRON WITH A STAND BENEATH IT BUT NOT ATTACHED
TORCH WITH FIRE COMING FROM THE TOP
A HOLE THROUGH SOMETHING
SOME SORT OF ANGULAR PLANK ON WALK
LONG SWEEPING CURVE
THE CORNER OF A BOX WITH SOME STRAW HANGING OVER
THIS HUGE OBJECT COMING FORWARD MADE OF STONE OR STEEL
SHAPES NEXT TO EACH OTHER POSSIBLY TWO BUTTOCKS

FIG. 4. Images of Subject #11.

Notice also that there is a central dividing line. The *B* set contains the only instance of abstract forms. Such forms appeared most frequently following the *Blank* and may reflect the fact that an empty square was what this stimulus consisted of.

The next example, the images of *S*#12, shown in Figure 4, consists of abstract forms which suggest concrete objects to this *S*. Even though the images in each of the four sets contain elements which seem related to the double-profile, the judges were able to match the *F* set correctly because it contains the most compelling correspondences. Three of the four *F* images consist of two elements in some appositional relationship to each other. Only one other image (the first of *C*2) depicts two interlocked objects.[15] Moreover, the second image of the *F* set contains two objects actually "facing" each other. The *B* images, on the other hand, are distinctive in their emphasis on angular forms.

The images of *S*#3, shown in Figure 5, consist of both concrete and abstract forms. Human heads appear only once, three of them in *C*2. However, the *F* set contains two images which are very impressive: the third and fifth. The former shows two over-

[15] This *S* also had the *Figure* in the first session, so that this image might well have been a carry-over.

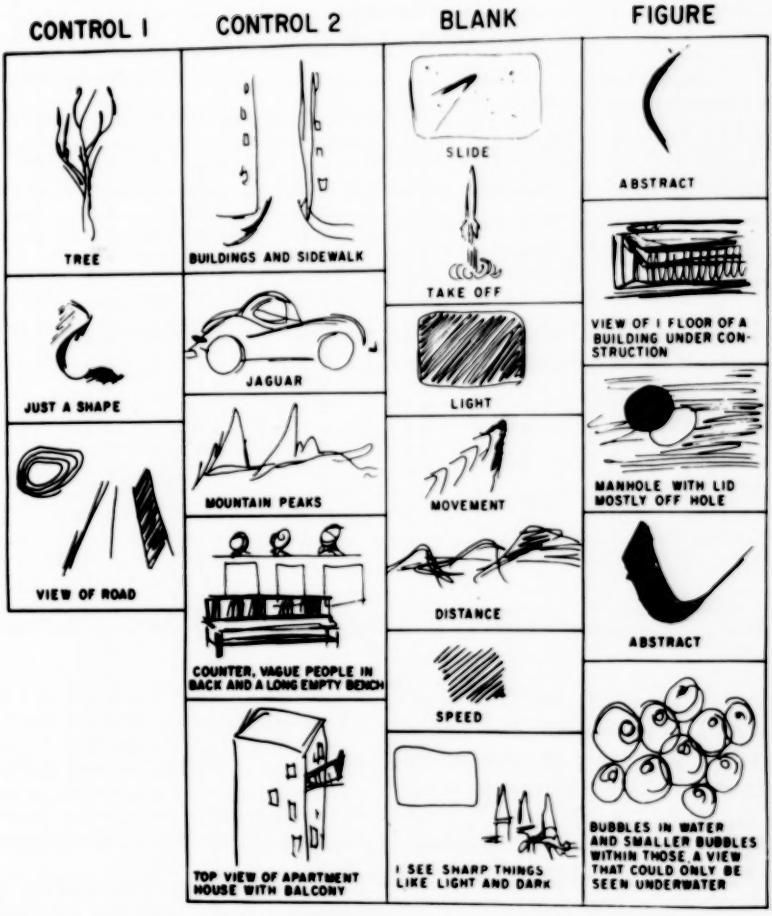

FIG. 5. Images of Subject #3.

lapping circles, while the latter is a multiplication of such circles each of which contains a second circle. Such multiplication, incidentally, is a transformation that has appeared frequently in previous studies. The *B* set of images is conspicuously abstract, consisting of simple impressions of light, movement, speed, and shading. Four of the images seem almost like literal depictions of the *Blank* stimulus.

DREAM DATA

Ten dreams were submitted by the *Ss*, six of them following the *Blank* condition, and four following *Figure*. Before submitting them to judges for blind matching, all identifying marks were removed and the dreams were randomly numbered. Fifteen judges were allowed to study all the dreams and then required to guess which were *F* and which *B*. In addition, they were asked to rate each of their choices along a 5-point scale with respect to their degree of confidence. The judges were not informed of the exact make-up of the "target deck," but were merely told that it contained both *F* and *B* dreams.

The Mosteller-Bush matching analysis

TABLE 11

*Results of Guessing F and B on Dreams**

Judge	Matching deck		N Hits	$\bar{m}$ (N hits expected by chance)	$\bar{\sigma}^2$	z	Average Confidence Score	
	F	*B*					on hits	on misses
CF	6	4	8	4.8	2.56	1.69	4.0	3.0
SB	6	4	8	4.8	2.56	1.69	4.7	5.0
RH	6	4	8	4.8	2.56	1.69	3.3	4.0
SK	5	5	7	5.0	2.67	0.92	4.0	3.0
ME	7	3	7	4.6	2.24	1.27	3.7	3.0
HK	7	3	7	4.6	2.24	1.27	4.3	5.0
AP	7	3	7	4.6	2.24	1.27	4.0	2.5
AE	6	4	6	4.8	2.56	0.44	3.7	1.0
GK	6	4	6	4.8	2.56	0.44	4.5	3.5
FP	7	3	7	4.6	2.24	1.27	3.5	3.0
DS	6	4	6	4.8	2.56	0.44	4.0	3.5
LG	6	4	6	4.8	2.56	0.44	5.0	4.5
RS	7	3	5	4.6	2.24	0.07	3.7	3.0
LC	7	3	5	4.6	2.24	0.07	5.0	5.0
PL	6	4	4	4.8	2.56	(0.81)	4.0	3.0
Total	95	55	97	71.0	36.59	4.22	4.09	3.47
							$p = <0.001$	$t = 2.60$ $p = >0.02$

* The Mosteller-Bush statistical analysis of matching data is applied. The target deck consists of 6 *B*s and 4 *F*s.

was applied to these data, and the results are presented in Table 11. The judges scored 97 hits where only 71 could be expected by chance. This achievement is significant at close to the 0.001 level of confidence. Moreover, the average confidence score on the hits is significantly higher (at the 0.02 level) than the average confidence score on the misses. Again, CF is revealed as the most successful judge.

It may be of interest to reproduce here two of the dreams which were submitted following exposure of the *Figure*, and which were matched correctly by all judges.

The first dream (submitted by S#12) was not accompanied by any drawings and consisted of the following account.

"In the beginning of this morning's dream I can only vaguely remember a few images. There was a very huge snake rolled up in every which way, very uncommon to snakes. It was rolling back and forth balancing something like a little cork on its nose. There was a man seeing that he keeps doing it, and people gathering around, but not too close, to see this show. Later the man came over with his animal on a chain, but it had changed to an old police dog. I was still afraid of it when it came over to sniff me. I was also surprised to see that my little mutt who was lying by me with his chin on the ground, didn't budge. For this was very uncommon to my dog since he was quite a scrapper for his size.

"In another part of the dream I remember passing a dumpy hotel bar with two women sitting there. Some other things were going on which I cannot remember.

"In the last part, I was taking a test in a room with the students of my Design class. But the room was elsewhere. When we got to the part of the examination having to do with mathematics, I remember solving the first problem only. The other two problems were full of mathematical symbols I knew nothing about. After struggling over the two problems for a long time and observing the rest of the class doing the same, I decided in irritation to go on with the rest of the test. Then I very vaguely remember a fountain."

The second dream (submitted by S#2), which is even more remarkable for the degree of apparent emergence of the double-profile stimulus, was reported in fragmen-

tary sentences which accompanied four drawings. Under the first two drawings was written the following:

> Some man telling another girl and myself all sorts of fairly short jokes which he never seemed to run out of. Although there were no people in these robes I was aware that one was me and the second a friend, and the third and fourth were twins with identical red and yellow robes on."

Then, under the third drawing which is reproduced in Figure 6, the following was written:

> "Same two characters from dream from carriage now wearing lavender robes—floating around in space."

The first dream contains much that seems to reflect the *S*'s experience of taking part in the experiment. The emphasis on looking ("see the show"), on the test, on struggling to solve problems, and so on, seem directly related to the experiment. A number of other reported dreams also showed this influence (sometimes in the form of explosions, flashes of lightning and guns, etc., that may be related to the flash of the

FIG. 6. Drawing accompanying dream of Subject #2.

tachistoscope). However, several of the other features of the dream episodes led judges to detect aspects of the double-profile figure. For one thing the emphasis on *two-ness* ("two women," "two problems") corresponds to the two profiles; the rolling and balancing snake corresponds to the wavy and alternating profile line; and the transformation of the snake into a dog might even reflect the figure-ground reversal.

The second dream seems even more striking. Notice the remarkable correspondence of the two ghost figures to the double-profile figure. The transforming and fluid character of the figure-ground phenomenon might be represented in the fluidity of the ghosts.

In passing it should perhaps be remarked that the *S* who submitted this dream (#2) did not do correspondingly "well" on the imagery part of the experiment. In fact this *S* showed no signs of having been influenced by the subliminal stimuli and his images were not matched well by the judges, nor did they achieve the appropriate pattern of checklist scores.

TABLE 12

Threshold Data on Ss Rank-Ordered with Respect to Degree of Emergence (Most to Least) of the Subliminal Effect*

Rank	Subject	Thresholds		$F \times B$ (N hits on 10 trials)	Ease or difficulty of task
		Figure	*Blank*		
1	#12	No	No	3	Easy
2	#3	No	No	5	Difficult
3	#10	No	1/5 sec.	5	Difficult
4	#8	1/2 sec.	1 sec.	9	Difficult
5	#14	1/2 sec.	1/5 sec.	5	Difficult
6	#6	1 sec.	1/5 sec.	7	Easy
7	#1	No	1/5 sec.	7	Difficult
8	#9	No	1/5 sec.	7	Easy
9	#2	1 sec.	1/10 sec	8	Difficult
10	#13	1/2 sec.	1/5 sec.	7	Easy
11	#15	1/2 sec.	1/5 sec.	5	Difficult
12	#4	No	1/2 sec.	8	Easy
13	#11	No	1 sec.	6	Easy

* This table presents data on those 13 *Ss* who participated in the threshold-determining session.

RELATIONSHIP BETWEEN THRESHOLD AND DEGREE OF EMERGENCE

In examining the threshold data an interesting finding emerged. Not only were there fairly wide individual differences in threshold, but these differences seemed to correlate with degree of emergence of the subliminal effect.

On the basis of the four sortings, the checklisting, and the dream results, it was possible to rank-order *Ss* on the basis of the extent to which they "showed" the effect of the subliminal stimuli. Table 12 shows these data together with the threshold data. The Table also shows whether *Ss* claimed to find the task of imaging and reproducing his images (immediately following the warm-up period) relatively easy or difficult.

Table 12 reveals a pattern of negative relationship between *S*'s threshold and the degree of emergence he showed in his images: those who showed the greatest emergence tended to have the highest thresholds.[16] If we count the eight successive threshold exposures (see above, p. 321) as 1 to 8, and a "no" (*i.e.*, *S* did not recognize the stimulus within the 8 exposures) as 9, and if we divide the 13 *Ss* into two parts, seven "emergers" and six "non-emergers," then the "emergers" have a higher threshold on *Figure* and *Blank* and score fewer $F \times B$ discrimination hits than do the "non-emergers." The "emergers" have an average threshold on *Figure* of 8.4 and on *Blank* of 7.1, while the "non-emergers" score 8.2 and 6.3 respectively. On the ten 2-choice discriminations the "emergers" obtain an average of 5.9 hits while the "non-emergers" get 6.8 hits. Moreover, the "emergers" tend to find the task more difficult than the "non-emergers" do: five of the seven "emergers" found it difficult, as compared with only two of the six "non-emergers."

[16] See Figure 2, Table 1, and the discussion below on pp. 338–339.

DISCUSSION AND CONCLUSIONS

The results justify the conclusion that the subliminal stimulation exerted systematic effects upon subsequent imagery and dreams that could be detected by experienced judges, and that could be measured by an objective checklist. The experiment was designed to provide a strict test of the phenomenon, and accordingly a careful attempt was made to control contamination from various sources. The main source—which was uncontrolled in the initial experiment of this project (6)—was the influence of the experimenter himself. In the first experiment *Ss* were run singly by one of the experimenters, who knew which stimulus was being exposed and so ran the danger of communicating (by small, unwitting—perhaps subliminal—cues) what kind of stimulus it was. In the present experiment, this possibility was eliminated by the fact that the experimenter ran the *Ss* in a group where half of them had one stimulus and half the other.

It must be emphasized that, in departing from the original experimental methods, the present investigation ran the danger of employing a methodology disadvantageous for the occurrence of subliminal effects in sufficiently measurable amounts. It is possible that the quasi-clinical contact, with its ingredients of transference and support, is an important condition of the effect, not in giving the *S* cues about the stimulus, but rather in facilitating free and truly spontaneous imagery that could surrender to the influence of the *registered* stimulus. There is a strong impression—supported by the recent work of Bach and Klein (2) and Smith and Henriksson (15)—that a "guarded" subject may remain unsensitive to the phenomenon.

The purpose of using a blank stimulus in addition to a figured stimulus was specifically to control for post-exposuredness. That is to say, if only a comparison between pre- and post-exposure images were made, there would not have been a rigorous test of the influence of the stimulus, since the very fact of the tachistoscopic exposure may appreciably alter images, and it may then be this kind of effect that judges are sensitive to when they guess "figure." By providing images following a blank slide a further control is exerted over this extraneous factor. However, it turned out that this was more than merely a control, for judges were able, with surprising efficiency, to match the *Blank* images. As a matter of fact they performed significantly better on the *Blank* images than they did on the *Figure* images.

Can it be assumed, then, that the blank slide was not really subliminal in the same sense that the double-profile was? There is nothing in the threshold data to support such an assumption. In fact these data specifically deny the possibility that *Ss* saw that "nothing" besides a patch of light was flashed on the screen. After they had been shown both the double-profile figure and the blank slide, *Ss* could not discriminate a tachistoscopic exposure of one from the other. On the first two trials their guesses were slightly poorer than chance, while on the ensuing trials their guesses improved significantly.

These observations point to the conclusion that the blank slide provided a positive stimulus—one of considerable power. It gave rise to images of more formless character, to emptier and vaguer pictures. Judges selected them because they contained the fewest objects and frequently seemed to reflect merely the tachistoscopic flash. Moreover, they earned the lowest checklist scores, except on the one sub-category "movement" (on which they earned the highest scores). The blank stimulus gave rise to images of objects and forces moving; frequently a *S* reported merely that he experienced movement in the abstract, or else the movement of abstract patterns.

Even though the judges as a group matched the images at a level statistically better than chance, for the most part their

performance was not strong—their successes were far from overwhelming. Only in the case of one judge was a strikingly good performance observed—CF, one of the authors of this paper and the individual with the greatest personal experience among the participants in relating images and dreams to subliminal stimuli. It is important to remember, however, that CF showed his "ability" only in matching the double-profile figure, while on the *Blank* his performance was only slightly better than his colleagues. He has had considerable experience with this particular stimulus, but none with a blank. It may therefore be concluded that it was not a special facility with such phenomena that resulted in his superior matching, but rather a greater familiarity with the double-profile figure and the ways it tends to influence imagery and dreams.

This finding also indicates that there must have been a good deal of regularity in the way different *S*s showed the effects of the subliminal figure. Transformations are not random; there seems to be a consistency from *S* to *S*.[17] Yet individual differences among *S*s were prominent: some showed the effect substantially, others less clearly, and others showed the reverse. It was not possible to carry out an exploration to determine what individual factors accompanied greater or lesser emergence. However, the threshold data provided an interesting observation in this regard. Those *S*s who showed the greatest emergence also showed the highest threshold and tended to find the task of imaging most difficult. Only 13 *S*s participated in the final threshold determining procedure, and the data are too sparse and inconsistent to establish their statistical reliability. Seven of the *S*s showed a greater degree of emergence on the various measuring techniques than did the remaining six. These seven had higher thresholds on *Figure* and *Blank*, and also did poorest in discriminating the two at the tachistoscopic (1/100) second) speed. Only two of the "emergers" reported that they found the imaging task easy, the other five reported difficulty; while four of the "non-emergers" found it easy and only two, difficult.

Incidentally, the fact that the "emergers" had the higher rather than the lower thresholds provides a way to counter the suspicion that they must somehow have obtained partial cues, or that they vaguely saw something of the stimuli. However, if it is assumed that none of the *S*s got any partial cue or perception and that the stimuli were truly subliminal to all, then these findings suggest two other interpretations.

If the threshold level varies from person to person in a way that corresponds to his sensitivity to external stimuli, then these findings suggest that those people who are the least sensitive may be the most responsive to subliminal stimulation. It is as though there were a reciprocal relationship between sensitivity to external stimulation and sensitivity to internal stimulation in the form of unconscious ideas and forms. Individuals who are more reflective and introspective ought to do better when the task involves a reliance on less conscious ideas than on tasks which require alertness and sensitivity to impinging situations and stimuli.

There is a second possible interpretation of this tentative finding. If it must be assumed that there is no such thing as a universal threshold, but that each individual's threshold varies with his perceptual apparatus, then the differences in threshold indicate that the stimulus was presented at different depths of subliminality for different *S*s. Those *S*s with low thresholds received the stimuli at a level closer to their threshold, and those with high thresholds got the stimulation at a lower or deeper subliminal level. The finding of differential emergence, then, reveals that (within limits,

[17] A description and discussion of the most common kinds of transformations is presented in Fisher and Paul (6, pp. 57–66).

of course) the deeper the stimulation, the greater the emergence.

The question may be asked: How many of the *Ss* showed the effect? The answer is complicated by the fact that there was some variation in this regard among techniques of analysis; some *Ss* showed the effect on one or another of the matching procedures, but not on the checklist, and vice versa. Half of the *Ss* showed the effect on the checklist, while three others approximated it (ranked higher than chance, but were "beaten" by one of the other conditions). Five *Ss* had a lower checklist score on *F* than on the other conditions. Of these five, however, two were matched better than chance on the $F \times B$ matching (Sorting IV); a total of nine *Ss* were matched better than chance in the sorting, while two were at chance level, and five were poorer than chance. CF was able correctly to identify 9 *Ss'* *F* images.

We may conclude therefore, that according to the methods of analysis employed, about half of the 16 *Ss* revealed the effect in their images. Did the others not respond to the subliminal stimulation? This question cannot be answered with certainty; but one interesting fact should be borne in mind. One *S* produced dreams in which the extent to which the double-profile figure clearly emerged was remarkable (see Figure 6). Every judge correctly matched this dream and it seems difficult to escape the conviction that it was influenced by the subliminal stimulus. Yet this particular *S* was among those who showed no effect in the imagery part of the experiment; he consistently fell in the "no effect" group and his images seemed to bear no relationship to the stimuli.

It is unfortunate that so few dreams were submitted, because the possibility should be explored that some *Ss* who show the effect in their dreams, will not show it in their imagery, and vice versa.[18] One can speculate that the phenomenon is universal; the variable factor is mode of emergence. For some it will be free imagery, for other dreams; and for others it may be some third sort of cognitive process yet unexplored. What is clearly needed in this field of study are methods of eliciting[19] and assessing the possible effects of such subliminal stimulation.

It may be appropriate to close this discussion with a word about theory. Both psychoanalytic as well as contemporary neurophysiological theory furnish a basis for understanding the subliminal effect. The former does so in its distinction between *conscious*, *preconscious*, and *unconscious* mental processes, in conjunction with the proposition that there are certain conditions for any percept achieving consciousness. The latter does so in its emphasis on the complexity of the *transmission* of sensory excitation through the midbrain to the higher cortical areas. Each theoretical framework proposes that there are levels short of consciousness at which sensory stimulation can be interrupted, and thus a conscious perceptual experience is an advanced stage of a relatively extended and complex process. The questions arise: What effect, if any, does such an interrupted process exert? Can it have a relatively stable and enduring effect, *i.e.*, arouse a trace or schema? Does it exert pressure "upward" and eventually influence cognition? The weight of the previous studies supports this position. However, they say little about how these effects are achieved—what factors and processes are involved.

In addition to these important ramifications for theory, there is an inherent interest in this area of study since it deals with a

[18] However, it has been our experience that, in general, *Ss* who show an extensive utilization of subliminal registrations in their waking imagery also show it in their dreams.

[19] Modes of enhancing the effect have been studied, and some, like putting *S* into a reverie-like state, seem moderately successful (6). Fisher recently administered LSD to an *S* and observed a conspicuous emergence of subliminal stimuli during the drugged state.

wide range of phenomena pertinent to human adjustment and behavior. If the effect is ubiquitous and far-reaching, then our understanding of perceptual phenomena will be enriched by a new class of sub-perceptual processes, and concepts developed with regard to it will have important implications for perceptual theory.

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A METHODOLOGICAL STUDY OF FREUDIAN THEORY: IV. THE STRUCTURAL HYPOTHESIS, THE PROBLEM OF ANXIETY, AND POST-FREUDIAN EGO PSYCHOLOGY

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The concept of narcissism and the new theory of instincts were followed by a more precise definition of the structure and functions of the ego. The first topographical division of the mind into conscious (Cs), preconscious (Pcs), and unconscious (Ucs) has been built upon the theory of repression. As a descriptive topography this system had sufficed to delineate the conflict between the repressed unconscious libidinal strivings of the sexual instinct (pleasure) and the conscious counterforces of the ego instinct of self-preservation (reality). In the course of psychoanalytic treatment, however, it was necessary to deal with the sources of resistance and repression, and not merely with the ideas that were repressed. The sources of both resistance and repression were unconscious and yet clearly arose from the action of the ego. Freud, therefore, found it necessary to create another structural theory of the mind that would facilitate the understanding of the unconscious ego functions unaccounted for in the earlier topography. In Freud's words:

> "We have come upon something in the ego itself which is also unconscious, which behaves exactly like the repressed, that is, which produces powerful effects without itself being conscious and which requires special work before it can be made conscious. From the point of view of analytic practice, the consequence of this piece of observation is that we land in endless confusion and difficulty if we cling to our former way of expressing ourselves and try, for instance, to derive neuroses from a conflict between the conscious and the unconscious. We shall have to substitute for this antithesis another, taken from our understanding of the structural conditions of the mind, namely, the antithesis between the organized ego and what is repressed and dissociated from it" (4).

Thus, the problem of analysis became the investigation of ego functions and the ego mechanisms of repression and resistance. The now familiar division of the mental apparatus into ego, id, and superego was formally presented in 1923 in *The Ego and the Id*. In brief, the id was the reservoir of instinctual energy, the seat of the unconscious drives. The ego contained both conscious and unconscious elements. The conscious part of the ego emerged from the id through the conscious perception (Pcpt-Cc system) of external and internal stimuli. It was "that part of the id which has been modified by the direct influence of the external world acting through the Pcpt-Cs: in a sense it is an extension of the surface-differentiation. Moreover, the ego has the task of bringing the influence of the external world to bear upon the id and its tendencies, and endeavors to substitute the reality-principle for the pleasure-principle which reigns supreme in the id. In the ego perception plays the part which in the id devolves upon instinct. The ego represents what we call reason and sanity, in contrast to the id which contains the passions." (4, pp. 29–30) The unconscious segment of the ego was included in the third subdivision of the mental apparatus, the superego, which

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manifested itself as an unconscious sense of guilt. Freud found that in a great number of neuroses this sense of guilt played a decisive part and put powerful obstacles in the way of recovery.

The superego expanded the functions of the ego-ideal which Freud had described in his earlier paper, "On Narcissism." (7) It originated in the earliest identification with the parents and its special features grew out of the constitutional bisexuality with which each person was endowed and the dissolution of the Oedipus complex. Thus, Freud postulated that bisexuality resulted in every human being in both a positive and negative Oedipus complex, the disappearance of which produced a father-identification and a mother-identification whose relative intensities reflected the preponderance of one or the other sexual disposition. The combination of these two identifications formed a "precipitate in the ego" (7, p. 44) which comprised the ego-ideal or superego. On the basis of these hypotheses, Freud concluded: "The superego retains the character of the father, while the more intense the Oedipus complex was and the more rapidly it succumbed to repression (under the influence of discipline, religious teaching, schooling and reading) the more exacting later on is the domination of the superego over the ego—in the form of conscience or perhaps of an unconscious sense of guilt" (7, p. 45).

Freud now attempted to synthesize the new topography with his dual instinct theory. He first suggested the concepts of fusion and defusion of the two classes of instincts:

> "The sadistic component of the sexual instinct would be a classical example of instinctual fusion serving a useful purpose; and the perversion in which sadism has made itself independent would be typical of defusion, though not of absolutely complete defusion. From this point we obtain a new view of a great array of facts which have not before been considered in this light. We perceive that for purposes of discharge the instinct of destruction is habitually enlisted in the service of Eros; we suspect that the epileptic fit is a product and sign of instinctual defusion; and we come to understand that defusion and the marked emergence of the death-instinct are among the most noteworthy effects of many severe neuroses, *e.g.* the obsessional neuroses. Making a swift generalization, we might conjecture that the essence of a regression of libido, *e.g.* from the genital to the sadistic-anal level, would be in a defusion of instincts, just as, conversely, the advance from an earlier to the definitive genital phase would be conditioned by an accession of erotic components" (4, pp. 57–58).

Freud then speculated upon the existence of "a displaceable energy, which is in itself neutral, but is able to join forces either with an erotic or with a destructive impulse, differing qualitatively as they do, and augment its total cathexis" (4, pp. 61–62). He concluded that this neutralized energy, "which is probably active alike in the ego and in the id, proceeds from the narcissistic reservoir of libido, *i.e.* that it is desexualized Eros" (4, pp. 62–63). This desexualized libido was identical with sublimated energy which among other functions supplied the energy for thought processes.

Freud next explored the reasons for the intense sense of guilt so frequently observed in depression and obsessional neurosis:

> "The question which we postponed answering runs thus: How is it that the super-ego manifests itself essentially as a sense of guilt (or rather, as criticism—for the sense of guilt is the perception in the ego which corresponds to the criticism) and at the same time develops such extraordinary harshness and severity towards the ego? If we turn to melancholia first, we find that the excessively strong super-ego which has obtained a hold upon consciousness rages

against the ego with merciless fury, as if it had taken possession of the whole of the sadism available in the person concerned. Following our view of sadism, we should say that the destructive component had entrenched itself in the super-ego and turned against the ego. What is now holding sway in the super-ego, is, as it were, a pure culture of the death instinct, and in fact it often enough succeeds in driving the ego into death, if the latter does not protect itself from the tyrant in time by a revulsion into mania" (4, p. 77).

"In the obsessional neurosis it has become possible, through a regression to the pregenital organization, for the love-impulses to transform themselves into impulses of aggression against the object. Here again the instinct of destruction has been set free and it aims at destroying the object, or at least it appears to have this aim. These tendencies have not been adopted by the ego; it struggles against them with reaction-formations and precautionary measures, and they remain in the id. The superego, however, behaves as if the ego were responsible for them and shows by its zeal in chastising these destructive intensions that they are no mere semblance evoked by regression but an actual substitution of hate for love. Helpless in either direction, the ego defends itself vainly, alike against the instigations of the murderous id and against the reproaches of the punishing conscience. It succeeds in holding in check at least the most brutal actions of both sides; the first outcome is interminable self-torment, and eventually there follows a systematic torturing of the object, in so far as it is within reach" (4, pp. 78–79).

The more the aggression, and the greater the need for its control, the more intense was the punitive aggression of the superego toward the ego. Freud located the source of the self-directed cruelty in the "instinctual defusion" that occurred during the identification with the father which aided the repression of the Oedipus complex. Once the erotic component was separated from the destructive elements, the latter were released as aggressive tendencies. The ego's need to repress these dangerous impulses was intensified by the self-threatening aggression which was also part of the superego. The danger feared by the ego, concluded Freud, must be nothing else but the castration threat once uttered by the parent who became the ego-ideal. The dread of castration was thus continued throughout later life as the fear of conscience.

The new structural hypothesis accelerated the movement of psychoanalysis toward an ego psychology. It did not, however, constitute a departure from Freud's basic assumptions about instincts and their energies. The new formulations were simply put into the existing frame of reference. Neurosis remained the product of conflict between life and death instincts, now expressed in terms of mortal combat between the structural divisions of the mind. The theory attributed to the constructs id and superego the same anthropomorphic properties that Freud previously had attributed to the instincts. Thus, in melancholia, Freud described the superego as a "merciless tyrant," and in the obsessional neurosis the id was conceived as a "murderer" and the superego as an "executioner." Furthermore, these constructs, just like instincts, were treated as if they were phylogenetically predetermined, and once again social evolution was bypassed. If life and death instincts provided the key motivating forces in behavior, then the ego's function could be little more than that of compromise and control as it struggled to hold the instincts in check. Social interaction, as in the original libido theory, remained a minor determinant without decisive influence upon the formation of personality. Although Freud created the conceptual tools that were necessary for the study of this interaction, for the most

part he failed to use them. Instead, he built an ego psychology on his theory of instincts and ended in the same contradictions which had beset the libido theory. In our opinion, the usefulness of any ego psychology depends upon the extent to which it recognizes the preponderant effect of experience on human development.

The concepts of fusion and defusion practically removed experience from consideration in the behavior of human beings. The two instincts of the new dual instinct theory were treated as though they possessed innate capacities for fusion, defusion, neutralization, and sublimation without any reference to the interaction between the organism and its environment. As a result, developmental processes became mere by-products of intrinsic properties of instinct. Thus, should sadism suddenly "decide" to defuse from Eros, the subject would suffer from an outburst of aggression, but this would be apparently unrelated to any provocation from external objects. Our objection to such formulations is that they prevent examination of important aspects of development. We can single out at least four major clinical problems which are obscured by the metapsychological devices of instinctual fusion and defusion: the conditions under which tender affectivity either develops or fails to develop in object-relationships; the dynamics of aggression in its various shades from assertion to sadistic cruelty; the "transformation" of love into hate in object-relationships; the self-punitive action of conscience in melancholia.

We have already pointed out that the problem of tender affectivity was never clarified in the libido theory by the concept of object-cathexis (16). The search for an object was motivated internally by the libido which sought objects as a means of discharge. The object, itself, was essentially a passive recipient, akin to an electrode which completed an electrical circuit. "Love," and all the emotions subsumed under that heading, were generated by the capacity of the object to permit a satisfying discharge of libidinal energy. In the new theory, where Eros was fused with the death instinct, the failure to love an object meant that the two instincts had been defused and the more powerful instinct of destruction decided the fate of an object-relationship. Love was thus transformed into hate and the whole process reflected the innate struggle between instincts. This hypothesis ignored the role of the object in the induction of either love or hate in the subject. In recent years, some of the actual life conditions under which tender affectivity does or does not develop have been experimentally established (1). The capacity to love may be inborn, but its evolution and ultimate expression are largely dependent upon a particular type of relationship with an external object. The essential ingredient in such a relationship is the consistent demonstration of affection by the parents or surrogates as they gratify the child's needs. Tender affectivity is thus induced in the child, both in the receiving and giving of gratification. In this way, the child learns to love through the example of being loved by the people that take care of him.

We have previously criticized the concept of an instinct of aggression in our discussion of the dual instinct theory on the grounds that it nullified the adaptive significance of aggressive behavior (16). The structural hypothesis simply elaborated this instinctual version of aggression. It did no more than supply a hypothetical executive apparatus which carried out the imperative demands of the death instinct. These demands pressed for destructive expression whenever pure aggression was released through instinctual defusion. We must reiterate that in our view aggression has an adaptive function. It is not simply an automatic discharge of instinctual energy. It is an adaptive response of the ego to threat or frustration and has as its purpose the removal of the source of danger. The ultimate aim of aggression, therefore, is to achieve se-

curity; it is never destructive alone, as an end in itself.

Freud used the example of the obsessional neurosis to demonstrate the transformation of love into hate. He attributed this transformation to an anal-sadistic regression which permitted instinctual defusion and set free the instinct of destruction. Clinically, patterns of aggression in obsessive patients express themselves in terms of dominance and submission. These are ways of achieving security that stem developmentally from a particular kind of child-parent relationship. The child is taught that there is a price to be paid for the continued security of parental care and protection. This price is total obedience to the demands of the parents and renunciation by the child of his own desires. The child responds to such intimidation with defiance or submission, or some combination of both. The relationship with the parents becomes a battleground where there is little room for an exchange of love. The only emotions which can flourish in this struggle for power are the emergency emotions of rage and fear. People who grow up in this climate suffer from emotional impoverishment. It is difficult for them to love; instead, they seek to make instrumental use of others or, if sufficiently intimidated, behave in a submissive manner. We must conclude that love cannot be "transformed" into anything. It is either present or it is absent. Some conditions favor its development; others do not. Threat and danger are the most common of the conditions which do not. The aggression which appears in these circumstances is not a transformation of love impulses, but is purely an adaptive response to a different set of life conditions. It appears instead of love, not as a transformation of love. The concepts of instinctual fusion and defusion, therefore, are unnecessary theoretical encumbrances which serve only to hide the real reasons for the replacement of one kind of emotional integration by another.

Let us turn now to Freud's concept of the superego. He conceived of the superego as the instrument of guilt and self-punitive behavior. It originated during the repression of the Oedipus complex through identification with the father. This identification had both ontogenetic and phylogenetic roots, the latter through the inherited sense of guilt for the primal parricide. The castration threat anticipated from the father was thus internalized and was subsequently evoked whenever the forbidden sexual impulses threatened to emerge. In Freudian theory the castration threat became the prototype of punishment for any wrongdoing, either sexual or nonsexual, and was perpetuated through life as the fear of conscience. The driving force behind the operations of the superego was the death instinct. Thus, Freud attributed the irrational intensity of self-punishment in any particular person to the amount of sadism made available to the superego through the process of instinctual defusion. In essence, the superego behaved as judge and executioner and thereby expressed the force and direction of the instinct of aggression.

Our main criticism of this theory of the superego is that it fails to take sufficiently into account the role of adaptation in the development of conscience. Adaptational phenomena are pushed aside by Freud's familiar preoccupation with phylogenetic inheritances and instinctual energies. The issues, as we see them, are really to determine, first, how a human being develops the internal automatic mechanisms of self-control, self-punishment, and self-reward which comprise conscience; and, second, why the intensity of self-criticism and self-punishment at times goes far beyond the limits appropriate to the supposed wrongdoing, as in melancholia. The expressions of conscience which Freud ascribed to the superego become in an adaptational frame of reference special attributes of the developing ego. We require neither a mystical ancestral history nor an instinctual driving

force to understand these attributes. The automatic mechanisms of conscience, that we have cited above, are learned devices for maintaining security against punitive attacks—in childhood from parents, and later from other authorities. These techniques can be laid down only in the context of a dependent relationship to a parent, whose omnipotence and love are essential for the child's safety and comfort. In other words, conscience is a by-product of the same developmental conditions which induce tender affectivity and the ability to love. Where the dependent relationship between the child and the parent is distorted, disorders of conscience occur. The fear of losing the protective love of the parent is the motivation for the defensive anticipation of disapproval and results in efforts to avoid that loss. If the impulse to transgress against parental authority can be anticipated and prevented, then we may speak of self-control, a prophylactic function of conscience. If a transgression occurs, then the self-punitive functions of conscience are mobilized to achieve expiation and restitution. In this way the love of the authority is ultimately regained through self-criticism and self-punishment. The constant danger against which conscience protects is always the loss of dependent security. The fear of castration is not necessarily a part of this danger and, contrary to Freud, guilty fear may occur solely in terms of the threat to dependency without any concern for the penis, whatsoever. Put in another way, the concern may be only with the loss of the breast, rather than the loss of the penis. It is true, of course, that unconscious castration anxiety may contribute to guilt. This occurs most often where the transgression is sexual in nature, but may also occur where castration is the anticipated punishment for non-sexual transgression, as well.

The adaptational basis for the exaggerated intensity of the remorse and self-punishment in melancholia becomes clear if we substitute the emotion of rage for the "death instinct" in Freud's hypothesis. Here, again, we must remind the reader that rage is an adaptive response of the ego to frustration and threat of injury, and not a property of instinct. Where does the rage come from in melancholia? It always originates in a failure in performance in any area of behavior. The potential melancholic reacts to such failures with a regressive unconscious revival of infantile dependency demands upon a real or fantasied parent or parental-surrogate. These demands inevitably meet with frustration, which generates rage toward the frustrating dependency-object. At this point, conscience intervenes with guilt for the aggression against the parent, the rage is repressed, and the patient becomes depressed. The intensity of the guilt and the self-punishment that ensues is directly proportional to the intensity of the repressed rage. We can now understand why the self-punitive behavior is so inappropriate to the supposed wrong-doing. Although the crime of murderous aggression is but an unconscious fantasy, the patient behaves as if it were about to become a fact, or worse, as if it had already been carried out. The self-torment and self-injury of the melancholic are both prophylactic, in the sense of preventing the intended aggression, and expiatory, in the sense of making restitution for the destructive behavior supposedly carried out. His trivial rationalizations for his guilt have little or no foundation and merely reflect the infantile meaning of his unconsciously motivated rage. All the guilt-ridden phenomena in melancholia are really reparative in their ultimate aim—to keep the parents' love and thus regain access to their magical omnipotence.

The adaptational psychodynamics that we have described here for melancholia can be extracted in essence from Freud's paper, "Mourning and Melancholia" (6). They are so enmeshed in energic and instinctual hypotheses, however, that it is extremely difficult to conceptualize with any clarity the patient's perception of himself in relation

to authority, his omnipotent strivings, and his magical expectations. We have simply tried to preserve those of Freud's insights into the mechanism of depression which are clinically useful by discarding the nonadaptive determinism of the dual instinct theory.

The structural theory established the ego as the "true abode of anxiety" (4, p. 84) and led to Freud's last revision of the libido theory, *The Problem of Anxiety*, published in 1926 (8). Freud had always considered neurotic anxiety the result of the repression of libido, that is, the energy of the repressed impulse was automatically converted into anxiety. Now, in accord with his new appreciation of the functions of the ego, he reversed himself and categorically stated that repression did not *cause* anxiety, but was in fact *produced by* anxiety to ward off internal and external threats. Repression, therefore, was the equivalent to flight in the face of danger. This about-face defined anxiety as a signal of distress and made untenable the earlier distinction between the actual neuroses and the psychoneuroses. In this new context Freud re-evaluated his earlier clinical documents, the cases of Little Hans (3) and the Wolf Man (5), and concluded that the motive force of the repression in both cases was fear of castration. Thus, the affect of anxiety, which accompanied certain symptoms such as phobias, was a real anxiety, an objective fear of danger believed to be imminent.

Once Freud concluded that anxiety was a function of the ego, rather than a by-product of repressed libido, the old explanation of neurosis based on the vicissitudes of instincts no longer sufficed. It now became necessary to reformulate neurotic mechanisms in terms of those ego functions concerned with warding off danger. Repression was the most important mechanism of defense, but it was not the only one available to the ego. Thus, for example, the defensive device characteristic of hysteria was repression, whereas regression and reaction formation played the decisive roles in obsessional neurosis. In a phobia the ego defended itself by an inhibition of function or the avoidance of a danger situation which by symbolic displacement had come to represent the repressed fear of castration. Adult phobic reactions were further complicated by regression to infantile dependency.

Freud now tried to explain the nature of anxiety as well as the nature of the danger that provoked it. He derived both from the physiological experience of birth which separated the child from the mother. Any subsequent separation from the mother became associated with unrelieved painful tensions which the infant could not master. The anxiety so aroused was a reproduction of the trauma of birth:

> "... anxiety proves to be a product of the psychic helplessness of the infant which is the obvious counterpart of its biological helplessness. The striking coincidence that both birth anxiety and the anxiety of the infant alike claim separation from the mother as their prerequisite needs no psychological interpretation; it is simply enough explicable biologically by the fact that the mother, who in the beginning had satisfied all the needs of the foetus through her body mechanisms, continues after birth as well to exercise in some measure this same function, although by other means. Intrauterine life and early infancy form a continuum to a far greater extent than the caesura of the act of birth would lead us to believe. The psychic mother object replaces for the child the biological foetal situation" (8, p. 78).

Freud then compared the anxiety caused by the loss of the mother to that caused by the threat of castration, which also was a fear of "separation" from a loved object, the genital. He quoted Ferenczi to the effect that the narcissistic value of the penis derived from the fantasy that its owner could once more be united with the mother by

copulation. Deprivation of the penis, therefore, meant renewed separation from the mother and the threatened return of painful unrelieved tension. Freud noted that the castration threat could not be the decisive explanation of anxiety in women. The castration complex led the little girl to substitute a tender object-cathexis for the absent penis. As a consequence, loss of the love-object remained the most effective danger situation for the causation of anxiety. This contrasted with the narcissistic love of the penis in men which made loss of the penis, itself, an immediate stimulus to separation-anxiety.

The next step in the transformation of the danger situation was related by Freud to the development of the superego:

> "Fear of castration develops into dread of conscience, into social anxiety. It is now no longer easy to state what it is that there is fear of. The formula, 'separation, exclusion from the horde,' applies only to that more lately developed portion of the superego which was patterned after social models, not to the nucleus thereof which corresponds to the introjected parental authority. Expressed in more general terms, it is the anger, the punishment, of the superego, the loss of its love, which the ego apprehends as a danger and to which it responds with the signal of anxiety. The final transformation undergone by this fear of the superego has appeared to me to consist of death-(life-) anxiety, fear felt for the projection of the superego upon the powers of destiny" (8, p. 79).

Freud always viewed development as proceeding in orderly stages. He, therefore, suggested that each period of a person's life had an appropriate determinant of anxiety. He summarized his views as follows:

> "Psychic helplessness is the danger which is consonant with the period of immaturity of the ego, as object loss is the danger appertaining to the state of dependence of early childhood, the danger of castration to the phallic phase, and dread of the superego to the latency period. And yet all these danger situations and anxiety determinants may persist alongside one another and cause the ego to react with anxiety at a later period also than the appropriate one; or several of them may become operative simultaneously. Possibly there also exists a close relationship between the danger situation which is effective in the given case and the form of the neurosis which develops in consequence" (8, p. 82).

Anxiety now became the central problem of neurosis. Freud had examined the nature of anxiety itself, the changing character of the danger situations that provoked anxiety, and the mechanisms by which the ego defended itself against anxiety. He drew the new concepts together and made a final statement on the conditions that produced neuroses. There were three definitive factors—a biological, a phylogenetic, and a purely psychological one:

> "The biological factor is the protracted helplessness and dependence of the young of the human species. The intrauterine life of the human being seems to be relatively abbreviated as compared with that of the majority of animals; the human infant is sent into the world more unfinished than the young of the latter. For this reason the influence of the external environment is intensified, the differentiating of the ego from the id is promoted very early, the dangers which the environment presents are increased in importance, and the value attached to the object who alone can offer protection against these dangers and effect a substitution for the intrauterine life which has been lost, is enormously augmented. This biological factor of helplessness thus brings into being the first situations of danger and creates the need to be loved which the human being is destined never to renounce.
>
> "The second, the phylogenetic, factor

is one which we merely infer; but a very remarkable fact of libido development has compelled us to assume its existence. We find that the sexual life of the human being does not develop in progressive fashion from incipience to maturity, as in the case of most of the closely related animals, but that it suffers an abrupt interruption after an initial early florescence extending to about the fifth year, after which it commences anew with puberty, dovetailing, as it were, with the tendencies of the infantile period. We believe that something momentous to the destinies of the human species must have taken place which has left behind as an historical precipitate this interruption of sexual development. The pathogenic importance of this phenomenon accrues from the fact that most of the instinctual demands of this infantile sexuality are treated as dangers and guarded against by the ego, so that the sexual impulses of puberty, which should be ego-compatible, are in danger of succumbing to the attraction exerted by their infantile prototypes and of following them into repression. It is here that we come upon the most definite aetiology of the neuroses. It is noteworthy that early contact with the demands of sexuality has the same effect upon the ego as premature contact with the environment.

"The third or psychological factor is to be found in an imperfection of our psychic apparatus which is connected with its differentiation into ego and id, and hence which is traceable also, in the last analysis, to the influence of the environment. By reason of the dangers which reality offers, the ego is compelled to adopt an attitude of defense toward certain instinctual impulses in the id, to treat them as dangers. But the ego cannot protect itself against internal instinctual dangers so effectively as against a piece of reality which is strange to it. Itself intimately connected with the id, the ego is able to stave off an instinctual danger only by putting restrictions upon its own organization and by tolerating symptom formation as a substitute for its crippling of the instinct. If then the press of the repudiated instinct is renewed, there result for the ego all the difficulties which we know as neurotic suffering" (8, pp. 99–101).

The Problem of Anxiety reestablished the common sense position that anxiety was a reaction to danger. This reversal really demonstrated the unworkability of the energic concepts, but Freud, himself, remained only partially convinced by his own arguments. The new concept of anxiety was essentially an adaptational concept which related neurosis to the ego's defensive operations in the face of threat. However, Freud attempted to reconcile this adaptational point of view with the metapsychology of the libido theory. The end result has been an admixture of ego psychology with the libidinal concepts of instinct, energy, and phylogenetic inheritance. The adaptational significance of the new position could not be fully realized because the adaptive functions of the ego were still derived from instinctual predispositions. It is our belief that the usefulness of the older metapsychological assumptions vanishes as our insights into the psychological mechanisms of adaptation become more penetrating. Anxiety turns our attention first to the perceptual apparatus, and then to the defensive devices which protect the organism against the dangers which have been perceived, both real and illusory. An adaptational psychology of the ego assumes these processes to be functions which are shaped from the beginning of life by interaction with external environmental stimuli, not by intrinsic forces within the organism alone. It does not matter how ingeniously adaptive phenomena are reinterpreted in the language of the libido theory. Such explanations remain tautologies which provide no new knowledge.

Let us consider Freud's assumption that

"birth anxiety" is a prototype, first for the subsequent development of anxiety caused by separation from the mother; second, for the threat of castration; and third, for the demands of the superego. It seems to us that Freud is comparing two different orders of phenomena when he derives these latter forms of anxiety from the trauma of birth. There is evidence of maternal influence upon certain functions of the foetus and it has been demonstrated that the foetal central nervous system is capable of developing conditioned reflexes. None of these data, however, describes psychological phenomena; they only signify that the sensory-motor apparatus is sufficiently mature to permit its innate capacity for conditioning to be brought into play. The level of embryological development precludes the possibility that such psychological processes as perception and recall can be involved in foetal responses of this type. The same is true of the subjective experience of the infant during birth. There is no way that his psychological responses can be identified. Only the physiological changes are observable, and these changes are reactions to the new environmental conditions. They represent a generalized motor discharge produced by massive sensory stimulation. It is difficult to conceive that the subjective sensation of anxiety is involved. We must distinguish the purely physiological responses to pain from their psychological concomitant, anxiety. The latter implies the anticipation of impending danger, a perceptual response of which the new-born infant is not yet capable. It is only after object-differentiation has taken place, and the mother recognized as the vehicle for gratification and the relief of pain, that anticipation begins to operate as a fundamental ego function. Anxiety, henceforth, is evoked whenever the infant anticipates the failure of the mother to materialize and relieve his discomforts. This perhaps most truly signifies "separation anxiety" which, in our view, is not a duplication of the physiological response to birth ("birth anxiety"), but is a newly learned anticipation of future pain and damage.

Castration anxiety stems from the anticipated loss of a prized part of the body. The fear that the penis will be "separated" from the body is not, however, simply a continuation of the earlier fear that the child would be "separated" from his mother. Castration anxiety has an independent origin and reflects a new set of environmental circumstances in which the child acknowledges the possibility of genital damage as punishment for sexual transgression. Once experienced, castration anxiety arouses the additional anxiety that the threatening parent will withdraw his love and care as well. Thus, the castration threat signifies a double jeopardy, loss of the penis plus separation from the protecting parent.

Fear of the superego has an even broader connotation. This was recognized by Freud, himself, who found it difficult to relate superego anxiety to the original separation anxiety. The superego develops as the child gains new perspectives about his relationship to his parents and to society. He begins to recognize the necessity for self-restraint and lays down the basis for expiation through self-punishment in response to guilt. The latter, however, is a far more complex emotion than is simple anxiety. It goes beyond the fear of separation from parents or society. Its distinctive quality is the added fear of one's own impulses toward self-punishment. We find it as difficult as did Freud to interpret this fear of self-punishment as a fear of "separation."

Freud's summary of the three factors that produced neurosis—biological, phylogenetic, and psychological—expressed the influence of the new adaptational concept of anxiety upon the assumptions of the old instinct theory. We have quoted this summary in full because we believe that it so clearly illuminates the ultimate path to an adaptational psychology of ego function, despite our disagreement with Freud's con-

tinued emphasis on instinctual predispositions. We infer from his description of the biological factor of helplessness in early infancy and its subsequent influence upon object-attachments that the need for love is a derivative of the realistic dependency of the infant and is not a by-product of instinctual energy. Therefore, neurotic disorders must be traced to those forces which invade the tie between mother and child and which introduce altered perceptions of reality, induce painful anxiety, and interfere with the integration of ego functions.

We are unable to accept any part of the phylogenetic explanations for behavior offered by Freud. His concept of phylogenesis is an unprovable assumption that fails to fulfill our criteria for scientifically useful assumptions. We have repeatedly pointed out that phylogenetic interpretations of psychological phenomena distort their adaptational meaning. Thus, the latency period is not predetermined by inheritance. It is not an "historical precipitate" left behind by "something momentous to the destinies of the human species." Rather, it is a product of the sexual intimidation of children characteristic of our culture. Sexual impulses are not inherently dangerous. A person must be educated to perceive them as such, and the danger is then always associated with the problem of gratification; it does not arise innately from the need, itself. It is our view that the latency period is ushered in by the failure of the child to find a satisfying substitute for the forbidden incestual object through sex play with other children and through masturbation. The interdiction of these latter outlets compels the child to regard his sexual needs as dangerous. The primary defenses left to the child are repression of the need and regression to unconscious dependency fantasies in which gratification is magically provided by the mother or the father, as the case may be. Thus, the Oedipal conflicts are unconsciously perpetuated in the latency period not by phylogenetic forces, but by the momentum of adaptive processes initiated by the child's interaction with his parents in a particular cultural setting (15).

Freud's description of the third or psychological factor was in essence an adaptational one, which, it seems to us, completely contradicted the phylogenetic hypothesis. We agree fully that the adaptive functions of the ego "in the last analysis" are shaped by environmental influences, but, if this is true, what then happens to the original assumption of instinctual primacy? Freud answered this question by attempting the impossible. He retained the instinctual frame of reference at the same time that he repudiated the primacy of instincts in molding ego functions. This inherent contradiction in Freud's final theoretical position has led to the creation of a series of ingenious but tautological assumptions. Today, the reconciliation of the two opposing frames of reference—the instinctual and the adaptational—is being attempted by recourse to new energic propositions. We shall discuss these efforts in the next portion of this paper where we shall consider the paths taken by post-Freudian ego psychologists, notably Hartmann (9–12), alone, and in collaboration with Kris and Lowenstein (13, 14). Their position will be taken here as representative of the mainstream of post-Freudian classical thinking. It holds much with which we agree, but has certain theoretical shortcomings created by their frame of reference.

In his pioneering work, *Ego Psychology and The Problem of Adaptation*, Hartmann stated clearly why it had become necessary to amend, elaborate, and extend Freudian theory: "So far, psychoanalytic ego psychology has been predominantly a conflict psychology; the conflict-free avenues of a reality-adapted development have remained peripheral to it" (10, p. 13). He observed that conflict was not the only root of ego development; that is, not every adap-

tation to the environment, or every learning or motivational process, could be attributed to conflict. He, therefore, proposed the descriptive term "conflict-free ego sphere" for those ego functions which exerted their effects independently of mental conflicts. This sphere encompassed such functions as "perception, intention, object comprehension, thinking, language, recall-phenomena, productivity .... the well-known phases of motor development, grasping, crawling, walking, and ... the maturation and learning processes implicit in all these and many others" (10, p. 8). On the basis of these observations, Hartmann drew the following conclusion: "The consideration of the conflict-free ego sphere leads us to the functions which are more or less closely related to the tasks of reality mastery, that is, *adaptation*. Now adaptation—though we do not discuss its implications frequently or thoroughly—is a central concept of psychoanalysis, because many of our problems, when pursued far enough, converge on it. The concept of adaptation, though it appears simple, implies (or if crudely used, conceals) a great many problems. The analysis of this concept promises to clarify many problems of normal and abnormal psychology, among them our conception of mental health" (10, p. 22).

So far we are in full agreement with the course set by Hartmann for the future development of psychoanalysis. In fact, the importance of Hartmann's insight into this crucial omission in Freudian theory can hardly be overestimated. Our disagreement is with the way in which he dealt with this insight. He attempted a synthesis of the new concept of ego functions with Freud's instinctual and energic hypotheses. To this end he made use of the existent frame of reference, which now consisted of three parts: 1) the dual instinct theory (sex and aggression); 2) the structural hypothesis (ego, id, and superego); 3) the energic hypothesis (libidinal and aggressive). We have critically examined each of these concepts elsewhere in this series of papers. We wish here, however, to consider specific methodological problems created by Hartmann's attempt to incorporate an adaptational psychology of the ego within this framework.

There was an implicit contradiction in a concept of autonomous ego functions which had an origin independent of that ascribed to the drives in Freud's theory of instincts. Hartmann recognized that these functions were not an outgrowth of the id under the influence of reality, but arose directly out of the given organization of the central nervous system. The ego, therefore, had an identity of its own, separate and distinct from the phylogenetically-determined organization of the id drives. This idea not only questioned the origin of the ego from a pre-existent id, but also undermined the primacy attributed to instinctual forces in shaping ego operations. Hartmann tried to solve the theoretical dilemma he, himself, had created by postulating an "undifferentiated (ego-id) phase" of animal instinct out of which both ego and id were distilled. This hypothetical primal chaos enabled Hartmann to maintain a tie between ego and id, thus softening the radical implications of his theory of ego autonomy. It is difficult for us to assess a philosophical concept of this kind. We cannot see where it has any dynamic significance in a theory of behavior. It seems to us that an "undifferentiated (ego-id) phase" of development is only a semantic device to harmonize the assumptions of the new ego psychology with the assumptions of the old instinct theory.

This solution, however, still did not reestablish the primacy of instincts after differentiation into ego and id took place. Hartmann recognized this when he stated: "We are used to speaking of an oral and anal ego, and so on, and trace specific ego attitudes to specific libidinal characteristics of the correlated phase. This aspect shows the phases of ego development in close connection with the sequence of libidinal

phases ... (However) the ways in which ego attitudes are formed by the characteristics of the libidinal phase are not always clear. I think that in some cases the characteristics both of instinctual tendencies and of the attitudes of the ego may have a common origin in the undifferentiated phase ... (To) describe ego formation only in terms of its dependence on instinctual development is to give only part of the picture ... (We) are today very much aware of the fact that cross sections of development cannot be completely described in referring only to libidinal aims—not even if we include the corresponding object-relationships in our description.... *It might well be that even the timing and the individual formation of the typical phases could to some extent be traced to individual variations of ego development....*" (11, p. 13)[2].

In this statement Hartmann came very close to our position that ego functions develop independently and are not the products of the various phases of development of an assumed instinctual organization. Instincts or drives, however they are called, constitute only the motivational needs which determine the goals of behavior. They do not supply the apparatus for the achievement of these goals. The development of this apparatus, which we call the ego, is a result of the innate maturation of its primary ("autonomous") functions, on the one hand, and the way in which these functions are shaped by object-relationships, on the other. This brings us once again to an important methodological consideration. How valid is the Freudian hypothesis of instinctual development? Can instincts (drives or needs) really "develop" as proposed by Freud? It seems to us that the assumption of a fixed course of instinctual development is incompatible with a theory of ego functions as proposed by Hartmann. The view that it is the instinctual drives which develop and change during the growth of the child is an artifact created by the frame of reference of the observer. Once we have recognized the hegemony of "autonomous" ego functions and changed our frame of reference, we are forced to a different conclusion. It is not the drives which develop, but rather the ego apparatus through which the drives find expression. The presumed changes ascribed to drive organization, therefore, are really alterations in the capacity of the child to perceive his needs and control his tools for action.

This is the point where we part company with Hartmann and his collaborators. We find no place in an ego psychology for a super-agency, instinct, that governs ego development. Hartmann, however, has been unable to accept this implication of his own hypothesis and carry it through to a logical conclusion. Instead, he has pursued the goal of combining the two opposing frames of reference in order to salvage the instinctual basis of Freudian theory. He fell back upon energic contrivances and postulated that the motor power for the autonomous ego functions came from neutralization of instinctual energy. He proposed that Freud's hypothesis of "desexualized libido" be broadened to include "desaggressivised aggression" as well. Ego cathexes hence derived from neutralization of both sexual and aggressive energies. According to Hartmann, in both cases, this process of neutralization took place through mediation of the ego. The amount of instinctual energy that could be neutralized by the ego was an indication of ego strength. Insufficiently neutralized libidinal cathexes, therefore, led to narcissistic pathology. In a similar way, failure to neutralize sufficient aggressive energy reduced the effectiveness of the ego's defensive reactions. Thus, through the use of semantic devices, Hartmann made it possible for the instincts to exercise their original primacy over ego processes.

We can only repeat what we have al-

[2] Italics added.

ready stated a number of times in this series of papers. Energic "explanations" of this kind are forms of circular reasoning which add nothing to our understanding of ego functions. For example, in his account of the ego's defensive operations, Hartmann states the following:

> "... flight and fight can be said to be its main characteristics, withdrawal of cathexis corresponding to flight and countercathexis to fight. This leads to the answer I want to suggest here: that the latter widely uses one of those conditions of more or less neutralized aggressive energy, mentioned before, which still retain some characteristics of the original drive (fight, in this case). It seems not unlikely that such forms of energy—it is not necessary to assume that all countercathexes operate with the same degree of neutralization—contribute to countercathexis even if the warded-off drive was not of an aggressive nature" (9, p. 88).

It strikes us that this quotation underlines a number of contradictions of the energic hypothesis. Hartmann's use of cathexis and countercathexis apparently replaces a descriptive concept of emotion and, at the same time, purports to quantify emotion. We feel that this equation of emergency emotions (fear and rage) with dispositions of instinctual energies is not compatible with an ego psychology. For our part, we conceive of the emergency emotions as integrative ego functions which serve the need for security (17). Taken as a whole, the defensive operations of the ego thus represent the organization of perception and motility under the influence of these emotions. In this context, flight and fight are both adaptive responses to situations of danger. Flight is integrated through a perception of danger, the emotion of fear, and escape from the source of danger; fight is integrated through a perception of danger, the emotion of rage, and the intent to destroy the source of danger. The unconscious mechanisms of defense utilized by the ego are based upon this integration of emergency function. They are attempts to protect the ego against anticipated dangers by mental operations which alter perception, distort the affective emergency signal, and change the appropriate action in a variety of ways. The end result is reenforcement of repression and substitution of behavior which is acceptable to the ego. It may be argued that we need the energic hypothesis to quantify emotions. We fail to see how a phantom force which is presumed to exist because of certain observable phenomena can ever be quantified except in terms of those very same phenomena. As a matter of fact, the study of the ways in which the quantitative distributions of energy are described in the literature reveals that this is exactly what happens. The intensity of the emotion is first quantified in non-energic clinical terms by an evaluative adjective which is then applied to the energy as a measure of its intensity. We have already commented elsewhere in more detail about this tendency to circular reasoning (15).

Every assumption in the adaptational hypothesis of emergency behavior which we have described above rests upon identifiable clinical phenomena. The hypothesis relies on recognizable ego functions that are psychological concomitants of the neural design of the central nervous system. These ego functions, in turn, are molded by interpersonal experiences unique for each individual in his particular culture.

We have tried in this series of papers to trace the historical development of psychoanalytic theory from its earliest beginnings to the present. We have sought to evaluate the scientific usefulness of the assumptions implicit in each major theoretical position taken by Freud. In our opinion his early work, culminating in *The Interpretation of Dreams*, contained his most original and lasting contributions to psychoanalysis. It was particularly in the latter study that

Freud described with great precision the ways in which mental processes could be influenced by alterations in motivation. These processes are intrinsic to all modern psychoanalytic theories of behavior. We have pointed out how the usefulness of these psychological constructions was subsequently impaired by placing them within an instinctual and energic frame of reference derived from analogies with nineteenth century biology, physics, and chemistry. These analogies impaired the elasticity of the system to admit new facts and created a stereotyped style of theorizing that has endured to this day.

If we have left the impression that we are against theories and wish only to remain empiricists, we must emphasize that this is very far from the case. The distinction we have drawn in these papers is, indeed, between non-empirical systems, like theology or metaphysics, and the scientific method. Our position, however, is that empiricism is a necessary first step toward the creation of pertinent and useful theories. We have, therefore, tried to distinguish those of Freud's hypotheses which are founded upon recognizable data from those which are derived not from data at all, but are paraphrases of outmoded theories borrowed from other sciences. We have repeatedly shown how these untenable assumptions prevented the accumulation of new knowledge. We believe that psychoanalysis must be purged of these assumptions before it can achieve its maximum potential as a scientific theory of behavior. Our point of view is best stated by Herbert Feigl in his discussion of problems of theory construction in psychology:

> "... The embarrassment here is a *methodological* one; and to the historian and logician of science it is familiar from parallels in the development of physics and chemistry. There have been proponents as well as opponents of theory construction both in the physical as well as in the behavioral sciences. The philosophical perplexity consists in the question: What do theories enable the scientist to do that he could not do with the aid of straightforward empirical generalizations? The two parties to this dispute are the theoreticians and the radical empiricists.... I will only suggest that radical empiricism has a good deal to do with the wish for intellectual security, *i.e.*, with the desire to restrict one's extrapolations to the domain in which they have been thoroughly tested.... Hypothesisphobia has often been a personality trait of positivists.... The theoreticians on the other hand do not mind living dangerously. This seems commendable as long as they keep their theories open to revision. Fixation on theories is of course a frequent weakness.... A good theory enables us to *derive* empirical laws—and not only those which we have already attained by simple generalization, but also others which still remain to be certified experimentally. Theories are thus not merely convenient and compendious summaries of empirical laws, they are heuristically fruitful in that they enable us to infer further as yet untested regularities" (2).

We do not, therefore, object to Freud's heavy reliance on hypothesis and theory, but we do object to those assumptions which do not "enable us to infer further as yet untested regularities." We believe that the instinctual and energic aspects of Freudian theory rest upon just such assumptions and, therefore, we advocate that they be abandoned. We are then left with an imposing body of creative theory that has demonstrated its vitality and usefulness over and over again. It is built around Freud's dynamic point of view and his concept of unconscious mental activity, with such amendments and revisions as we have suggested in these papers. "Dynamic" includes all the psychological mechanisms and their operations first discovered by Freud. They provide us with the means for understanding

alterations in behavior in terms of motivation, ontogenesis, and social interaction. It is our hope that these psychodynamic principles, freed from the handicap of hypothetical instinctual energies, will become the basis for a unified theory of behavior.

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THE FAMILY OF THE SCHIZOPHRENIC: A MODEL SYSTEM

JAY HALEY[1]

This paper will attempt to show that schizophrenic behavior serves a function within a particular kind of family organization. The emphasis in this description will be on the interactive behavior of the schizophrenic and his parents rather than on their ideas, beliefs, attitudes, or psychodynamic conflicts. This work is largely based on an examination of a small sample of families participating in therapeutic sessions where parents and schizophrenic child, as well as siblings, are seen together and recorded. An excerpt from a recording of a family session will be presented and analyzed in terms of the observable behavior of family members, to illustrate the hypothesis that the family of the schizophrenic is a special kind of system which can be differentiated from other family systems.

The hypothesis that schizophrenia is of family origin has led to a number of investigations of schizophrenic patients and their parents. These studies include both impressions of family members and attempts at statistical measurement of individual traits of parents or the conflict between them. Typically the mother of the schizophrenic is described as dominating, overprotective, manipulative of the child and father, and also overtly rejecting (18). The father is usually described as weak and passive, holding aloof from the patient (15, 17), and occasionally overtly rejecting and cruel (8). Many investigators mention a certain percentage of fathers or mothers who appear "normal."

[1] Project for the Study of Schizophrenic Communication, directed by Gregory Bateson. Staff consists of Jay Haley and John H. Weakland, Research associates, Dr. Don D. Jackson, consultant, Dr. William F. Fry, consultant. The research project is located at the Veterans Administration Hospital, Palo Alto, California, and is financed by grants from the Macy Foundation and the Foundations' Fund for Research in Psychiatry.

Besides reporting descriptions of the individuals in the family, investigators report on the relationship between the parents on the assumption that conflict between father and mother could be related to disturbance in the child. Lidz and Lidz (13) reported in 1949 that 20 of 35 schizophrenic patients had parents who were clearly incompatible. Tietze (20) reported in the same year that 13 of 25 mothers of schizophrenic patients reported unhappy marriages and nine marriages which were described as "perfect" were found by the investigator to be otherwise. In 1950 Gerard and Siegal (7) found strife between 87 per cent of the parents of 71 male schizophrenic patients in contrast to 13 per cent found in the controls. In the same year Reichard and Tillman (17) noted the unhappy marriages of parents of schizophrenics. Frazee (8) in 1953 reported that 14 of 23 parents were in severe conflict with each other and none had only moderate conflict in contrast to 13 control parents who had only moderate conflict. Lidz (16) reported in 1957 that all of 14 families of schizophrenic patients contained marital relationships which were seriously disturbed. Bowen (6) describes the parents in this type of family as experiencing "emotional divorce." Wynne uses the term "pseudo mutuality" to describe the difficulties family members have with each other (23).

These studies provide strong evidence for conflict between the partents of schizophrenics, but do not clarify what strife between parents has to do with schizophrenia in a child. After all, there is conflict between parents who do not have schizophrenic children. Similarly, to show that the mothers of schizophrenic patients are dominating and overprotective and the fathers weak and passive does not clarify how schizophrenia is appropriate in families with such

parents. Psychiatric terminology seems particularly unsuited to this problem. The language of psychiatry either describes the processes within an individual, such as his needs, fantasies, anxieties, and so on, or provides static descriptions of two individuals in dominant-submissive or rejecting or dependent relationships. When schizophrenia is described in the traditional psychiatric way, and when other family members are seen with the biased emphasis upon the processes in the individual, it is difficult to relate schizophrenia to a family.

Currently most groups investigating schizophrenia and the family are recognizing that the total family unit is pathogenic, and there are attempts to develop a language which will describe the interaction of three or more people. A transition would seem to have taken place in the study of schizophrenia; from the early idea that the difficulty in these families was caused by the schizophrenic member, to the idea that they contained a pathogenic mother, to the discovery that the father was inadequate, to the current emphasis upon all three family members involved in a pathological system of interaction. Although it would seem impossible at this time to provide a satisfactory language for describing the complex interaction of three or more people, this paper will suggest a rudimentary approach to such a descriptive system. An essential requirement of any such description is that it show the adaptive function of schizophrenic behavior within the family system.

The present paper is a product of the current research conducted by the Bateson project. Historically this project began as a general investigation of the nature of communication and began to focus on the communication of the schizophrenics in 1953. The observation that the schizophrenic consistently mislabels his communication led Bateson to deduce that he must have been raised in a learning situation where he was faced with conflicting levels of message. From this came the "double bind" hypothesis (5) which was put together with Jackson's emphasis on schizophrenia serving a homeostatic function in the family (12). The research project then brought together the families of schizophrenics to observe the actual behavior in the family. Basically the double bind hypothesis was a statement about two-person interaction and it has been extended to areas outside of schizophrenia (9, 11). When the family was seen as an interactive unit, there was an attempt to extend the double bind concept to a three person system (21). Currently the project is attempting to devise a theoretical system for describing the family as a unit and this attempt had led to several papers (2, 3, 4) including this one.

The importance of describing a total system rather than elements within it may explain some of the inconsistencies in the description of individuals in the family and conflict between them. For example, it is possible that a mother could show rejecting traits when her child is ill and dependent upon her, and overprotective traits when he begins to recover and attempt to achieve independence from her. Similarly, parents may not show discord when their child is psychotic and they are drawn together by this burden, but conflict could appear should the child behave more assertively and so threaten to leave them. Alanen (1) studied mothers of schizophrenic patients and found many of them within the limits of the "normal" on the basis of Rorschach tests and individual interview. He mentions, almost in passing, "Some of the cases in which the mother of a schizophrenic patient had been relatively healthy belong to those in which the father was seriously disturbed. The wives of all fathers who had developed chronic psychosis belong, for example, to this category." If the 'normality' or the pathology of a family member depends upon the influence of the behavior of other family members at that time, only a study of the total family system will show consistent findings.

The focus of a family study should be on the total family and on the interaction of parents and children *with each other* rather than on the interaction of family members with interviewers or testers. What a family member reports to an investigator about his relationship with another family member is only hearsay evidence of what actually takes place. To study the system of interaction in the family of the schizophrenic it is necessary to bring family members together over a period of time and directly observe them relating to one another. Inevitably the fact of observing the family introduces a bias into the data for they may behave differently when observed than when not observed. It would seem to be impossible to leave the observer out of this sort of study, and the problem is to include him in the situation in such a way as to maximize the information he can gain. The most appropriate type of observation would seem to be in a therapeutic context. There is serious doubt as to whether this type of family can be brought together without therapeutic support. If the parents are merely asked to be observed interacting with their schizophrenic child, the question is automatically raised whether they have something to do with the illness of the child; accordingly guilts and defenses are aroused and must be dealt with in the situation. Long term observation of the family is also necessary since they may give one impression in a single interview and quite another when they have talked together many times and pretenses are dropping. The presence of a therapist is necessary as sensitive areas in the relationships are touched upon when family members get more intensively involved with one another. Long-term observation also provides an opportunity to verify hypotheses and make predictions as family patterns are observed occuring again and again. Finally, the introduction of a therapist makes possible the observation of a family responding to planned intervention. As ideas are presented to the family, or as therapeutic change is threatened, the family can be observed maintaining their system under stress.

Although the expense of regular filming of therapy sessions is prohibitive, the occasional use of film and the constant use of tape recordings provides data which may be studied at leisure.

AN ILLUSTRATION OF FAMILY BEHAVIOR

Since few investigators have the opportunity to observe a schizophrenic and his parents interacting with one another, an illustration is offered here. The following excerpt is transcribed verbatim from a recording of an interview where a patient and his parents were seen weekly as an adjunct to his individual therapy, because of his previous inability to see his parents for even a few minutes without an anxiety attack. The patient, a thirty nine year old man, suffered a breakdown in the army and was diagnosed as a schizophrenic. After discharge he returned home and remained with his parents for the following ten years. There were several abortive attempts to leave home and go to work. He was employed for little more than a year during those ten years and was supported by his parents during his temporary absences from home. When he entered the hospital, at the insistence of his parents, he was hallucinating, behaving in a compulsive way, exhibiting bizarre mannerisms, and complaining of anxiety and helplessness.

Earlier in the interview the patient had been saying he felt he was afraid of his mother, and finally she brought out a Mother's Day Card she had just received from him. It was a commercial card with the printed inscription, "For someone who has been like a mother to me." The patient said he could see nothing wrong with the card nor understand why his mother was disturbed about receiving it.

Patient: Uh, read the outside again.

Mother: All right, the outside says, "On Mother's Day, with best wishes"—

everything is very fine, it's wonderful, but it's for someone else, not for your mother, you see? "For someone who's *been* like a mother to me."

Father: In other words, this card made mother think. So mother asked me ...

Mother: (interrupting) When you ...

Father: (continuing) what I think about it. So I said, "Well, I don't think Simon—meant that way, maybe he ...

Patient: (interrupting) Well, I mean you can interpret it, uh—uh, you've been like a mother is uh supposed to be.

Father: No, no.

Patient: (continuing) a good—a real good mother.

Therapist: Why don't you like the idea that he might have deliberately sent that?

Father: Deliberately? Well ...

Mother: (overlapping and interrupting) Well, that's what I ...

Father: (continuing) well, he says he didn't, he agrees ...

Mother: (continuing) Well, I mean I believe our son would have ...

Father: (overlapping and continuing) that he couldn't get another card.

Patient: (interrupting) Well, I meant to sting you just a tiny bit by that outside phrase.

Mother: (overlapping) You see I'm a little bit of a psychiatrist too, Simon, I happen to be—(laughing) So I felt so—when you talked to (the therapist) I brought along that card—I wanted to know what's behind your head. And I wanted to know—or you made it on purposely to hurt me—Well, if you did, I—I ...

Patient: (interrupting) Not entirely, not entire ...

Mother: (interrupting and overlapping) I'll take all—Simon, believe me, I'll take all the hurt in the world if it will help you—you see what I mean?

Therapist: How can you ...

Mother: (continuing) Because I never meant to hurt you—Huh?

Therapist: How can you hurt anybody who is perfectly willing to be hurt? (short pause)

Father: What's that?

Mother: I uh—a mother sacrifices—if you would be—maybe a mother you would know too. Because a mother is just a martyr, she's sacrificing—like even with Jesus with his mother—she sacrificed too. So that's the way it goes on, a mother takes over anything what she can help ...

Therapist: (interrupting) What mother?

Mother: (continuing) her children.

Patient: (interrupting and overlapping) Well, uh, I'll tell you Ma—listen, Ma, I didn't mean to—to sting you exactly that outside part there.

Therapist: Well, you said so.

Patient: Oh, all right, but it—it wasn't that exactly. No, I'm not giving ground—uh—it's hard to explain this thing. Uh—uh—What was I going to say. Now I forgot what I was going to say. (short pause) I mean I felt that this—this is what I mean, uh—that I felt that you could have been a better mother to me than you were. See there were things.

Mother: Uh ...

Father: Well you said ...

Patient: (interrupting) You could have been better than you were. So that's why—that's that—I felt—it was, uh—uh, was all right to send it that way.

Mother: Well, if you meant it that way that's perf—that's what I wanted to know—and that's all I care—you see. But I still say, Simon, that if you would take your father and mother just like they're plain people—you just came here and you went through life like anybody else went through—and—and don't keep on picking on them and picking them to pieces—but just leave them alone—and go along with them the way they are—and don't change them—you'll be able to get along with everybody, I assure you.

Patient: (interrupting) I mean after all a card is a card—why I d—it seems to me kind of silly (anguish in his voice and near weeping) to bring that thing in here—they have sold them at the canteen, Ma ...

Therapist: Are you anxious now ...

Patient: Why ...

Therapist: Are you anxious now because she said ...

Patient: I shouldn't be blamed for a thing like that, it's so small ...

Mother: (overlapping) I'm not blaming you.

Patient: (continuing) I don't even remember exactly what the thing was.

Mother: (overlapping) Well, that's all I wanted to know (laughs)

Patient: (continuing) I didn't want to—to—to—to blame you or nothing.

Therapist: Will you slow down a minute. Are you anxious now because she said she didn't like to be picked on? And you've sort of been picking on her today. Is that what's making you so—upset?

Patient: No, it's now what's making me upset. That they s—after all, mother's got to realize that those people—the people that sell the cards—they sell them and people buy them—the wording isn't exactly right—I've stood for half an hour in a store sometimes picking—picking out a card to send mother or to send to one of the family where I wanted to get the wordings just so—and the picture on the thing just so. I was just too particular, that was before I took sick ...

Therapist: I think you did that this time too—

Patient: (continuing) And came back to the hospital. No I wasn't—I bought that thing in five minutes. There was only a choice of four cards—but of course that helped. But I—I—I—uh, I—I do have—I've changed now with those cards, I'm not as particular as I used to be. I mean uh—peop—they sell those cards and, uh—I don't think that they—they got—they don't mean anything by the words. Uh,—they're sold for people to buy, they're sold for people to buy.

Therapist: (overlapping) The person who sends them ought to mean something by the words.

Patient: No, but I ...

Therapist: And you seem to be denying that you sent ...

Patient: No, I think that can be interpreted in different ways.

Therapist: Sure, it's pretty safe, but not quite safe enough apparently.

Patient: Is that the way you feel too?

Therapist: I feel you tried to say something indirectly so you'd be protected.

Patient: (interrupting) No, I wasn't, I just felt that—that—that thing

Therapist: Now you're ...

Patient: (continuing) was—was—all right I'm changing a little bit. Uh,—that that mother was a good enough mother. It says "For someone that's been like a mother to me."

Father: A *real* mother.

Patient: Yeah, a *real* mother—so that's all.[2]

Despite its brevity, this excerpt illustrates a typical kind of interaction in this type of family. From the point of view of psychiatric diagnosis, the patient manifests such symptoms as: 1) blocking and forgetting what he was going to say, 2) showing concretistic thinking when he says "a card is a card," 3) implying that someone else caused the difficulty ("They sell them in the canteen" and later in the interview implying in a rather paranoid way that it was the fault of a post office clerk for mailing it) and 4) claiming amnesia ("I don't even remember what the thing was"). Although less dramatic than symptoms manifested by the full-blown psychotic patient, his behavior could be said to be schizophrenic.

Another family could have responded in this situation rather differently. Should a child in another family send his mother such a card, she might respond to it in any of a variety of ways. And whatever way chosen, her husband and child would also have a range of possible ways to respond to her. This particular family selects these ways, and a description of this family must 1) describe the formal patterns in this type of interaction in such a way as to 2) differentiate the patterns from other possible ones, or those in other families.

POSSIBILITIES OF A THREE-PERSON SYSTEM

One way to describe a particular family is to present its type of interaction against the background of the potential ways a mother, father, and child might interact with one another. If any set of parents and child are brought together in a room, what sort of communicative behavior is potentially possible between them?

1. Whatever they do together can be seen as communication between them; each will do something and each will respond. Although it seems obvious, it is particularly important to emphasize that family mem-

[2] This excerpt is not offered as an example of family therapy but rather as an example of family behavior. The parents in this case were not considered to be patients and the family as a unit was not officially undergoing treatment.

bers cannot avoid communicating, or responding, to one another when they are in the same room. If one speaks to another and he does not answer, his not-answering is a response in a real and meaningful sense.

2. Not only must parents and child communicate with each other, but each must communicate on at least two levels. Whatever one says and does will inevitably be qualified by the other things he says and does, and when any piece of communication is *about*, or qualifies, another piece of communication they can be said to be of different levels. Whenever anyone speaks to another person he must qualify what he says because he must speak in a tone of voice, with a body movement, with other verbal statements, and in a particular context. What he says will be qualified with an indication of what sort of statement it is, *i.e.* a joking statement, a sincere one, an unimportant one, a command, a suggestion, and so on. A man can smile and murder as he smiles, and if his behavior is to be described both levels of communication must be included.

If a man says, "I won't stand for that any more!" in a tone of voice which indicates anger and with a gesture of putting a stop to it in a situation where what he says is appropriate, then his statement and qualifications can be said to be congruent, or to "affirm," each other. Messages and their qualifiers can also be incongruent. If a mother makes a punishing statement while labeling what she does as benevolent, she is disqualifying what she says, or manifesting an incongruence between her levels of message. It is important to note that she is not contradicting herself. Contradictory statements are of the same level, such as, "I will do it," and "I won't do it." Incongruent statements are of different levels: "I will do it," said in a tone of voice which indicates, "Don't take what I say seriously." Whether family members qualify their own statements incongruently or congruently, and under what circumstances they do so, can be described as they interact with one another.

3. The three people in the room must also qualify each other's statements. As they respond to one another, they are inevitably commenting upon, or classifying, each other's statements. They may affirm what each other says, or they may disqualify the other's statements by indicating that isn't the sort of thing that should be said. If mother says, "I brought you some candy," and her son says, "You treat me like a child," the son is disqualifying his mother's communication. If he accepts it with a statement of thanks, he is affirming her statement. A description of parents and child must include whether, and under what circumstances, they affirm or disqualify each other's behavior.

4. When three people are in a room, some sort of leadership will take form, even if only in terms of who will speak before the others do. Any one of the three may initiate something, and the other two may go along with him or attempt to take leadership themselves. In some families, father and child may consistently turn to mother for a decision, other families may label father as the final arbiter, while other parents may lean on their child for the initiation of what is to happen.

5. The three people may also form any or all of various possible alliances. It is possible for the three of them to ally against the outside world, or for one to ally with someone in the outside world against the other two, or two may ally against the third. In some families father and mother may form a coalition against the child, in others the child may ally with one of his parents against the other, and so on.

6. Finally, when something goes "wrong," there are a variety of possible arrangements for the three people to handle blame. All three may each acknowledge blame, one may never accept blame for anything, two may consistently blame the third, and so on

This list of some of the possibilities in a three person system is made more complex by the fact that a family member may form an alliance but indicate he isn't forming one, or may take blame but qualify his statement with an indication that he really isn't to blame. The possible range of maneuvers is considerably increased when people are seen to communicate at multiple levels.

THE RULES IN THE FAMILY OF THE SCHIZOPHRENIC

Given a potential range of behavior between three people in a family system, it becomes possible to look at any one type of family as restricted to a certain range of that potential. No one family will interact in all possible ways: limited patterns of interaction will develop. The patterns described here are those in a particular sample and are those which occur when parents and schizophrenic child interact *with each other.* They may behave differently with other people, including psychiatric investigators or siblings of the schizophrenic child. Although siblings are included in our observation of this type of family, the description offered here is of the three person system, partly for simplification in this presentation and partly because parents and schizophrenic child form a special triadic system in the larger family unit.

The Ways Family Members Qualify Their Own Statements

Consistently in this type of family the individual members manifest an incongruence between what they say and how they qualify what they say. Many people do this under certain circumstances, but when these family members interact they confine themselves almost entirely to disqualifying their own statements.

In this excerpt, the mother confronts her son with the Mother's Day Card because she didn't like it, but she emphasizes what a wonderful card it is. Then she says she wants to know what was behind his head and if he sent it to hurt her, and she laughs. In a context of accusing him of hurting her, she says she wants to be hurt and is willing to take all the hurt in the world to help him. Her description of herself as a special person who will sacrifice all is qualified a few moments later by the statement that she and her husband are just plain people and her son should treat them like anybody else. This "benevolent advice" is offered in a punishing tone of voice and context. When her son says she shouldn't blame him, she qualifies her statements as not being blaming. Consistently what she communicates she qualifies in an incongruent way.

The father is only briefly in this excerpt, but while there he indicates that the son didn't mean to say what the card said, and, besides, the card said she was a real mother.

The son also manifests incongruent behavior. He sends a card to his mother on Mother's Day which indicates she is not really his mother. He further qualifies this message by indicating there was nothing wrong with it and then suggests that it says she is like a mother is supposed to be. Following this, he indicates that it means she could have been a better mother than she was. He then protests that it was silly of her to bring the card in, and qualifies this with the statement that they sell them in the canteen. Besides he doesn't remember what the thing was. After indicating that he bought the card hurriedly, he qualifies this by saying it took him five minutes to choose among four cards. He adds that one should be careful in choosing cards with exact wording, but people sell those cards and they don't mean anything by the words. Finally, he qualifies his greetings by saying that it meant she was not only a good enough mother but a real mother.

The more extreme incongruence between the son's levels of message differs from that of his mother, and this difference will be discussed later. Yet basically a similar pat-

tern of communication is apparent. The mother does not say, "You shouldn't have sent me this card—what do you mean by it?" which is implied by her bringing the card to the session. The son doesn't say, "I sent it to you to sting you, but I'm sorry I did now." The mother is condemning him for sending her the card, but she qualifies her messages in such a way that she indicates she isn't condemning him. The son apologizes for sending the card, but he qualifies his apology in such a way that he isn't apologizing. Father indicates the son didn't mean what he said, and the card didn't say what he didn't mean anyhow. Although these incongruencies between what is said and how it is qualified are apparent in the verbal transcript, they are even more apparent when the vocal inflections on the recording are heard. Mother's tone of voice and laughter are inappropriate and thereby disqualify what she is saying, and father and son similarly do not make a flat statement which is affirmed by the ways they say it.

One can listen to many hours of recordings of conversations between parents and schizophrenic child without hearing one of them make a statement which is affirmed. Usually if one finds an exception, it proves on closer examination to fit the rules. For example, during a filmed session a family was asked to plan to do something together and the father said in a positive way that they were going to do this and do that. He fully affirmed his statements by the ways he said them. However, a few minutes later he said he was only saying these things because they should say something in front of the camera, thus disqualifying his previous statements.

How Family Members Qualify Each Other's Statements

Although it is possible for family members to affirm or disqualify each other's statements, in this type of family the members consistently disqualify what each other says. In this excerpt it is difficult to find any statement by one person affirmed by another. The son has actually disqualified his mother's whole past maternal behavior at one stroke by sending her such a card. When she protests, he indicates her protests are not valid. Similarly, the mother disqualifies the greeting she received from her son and also his defenses of it. When he indicates there is nothing wrong with it, she labels this as in error. When he indicates he knew what he was doing and meant to "sting" her a bit, she indicates this was in error. Father joins them to disqualify both the son's message, since he didn't mean it, and his defense of the message. No one affirms what anyone says except 1) when the son says he doesn't remember what the card was, and his mother says that is all she wanted to know; 2) when the father says the card means she is a real mother, and the son agrees. Both of these affirmations involve symptomatic behavior by the son: amnesia and distortion of reality. From this excerpt one might hypothesize that the family members will disqualify what each other says except when the child is behaving in a symptomatic way. Such a hypothesis requires more careful investigation. Apparently even symptomatic behavior by the child is usually disqualified except in certain contexts. When the mother is under attack, the parents may affirm psychotic behavior but not necessarily at other times.

It might be argued that the behavior in this excerpt is exceptional since it deals with a moment of crisis. However, analysis of other interviews suggests that the pattern is typical. In a previous paper (5) the relationship between mother and schizophrenic child was described as a "double bind" situation in that the mother imposed incongruent levels of message upon the child in a situation where the child must respond to conflicting requests, could not comment on the contradictions, and could not leave the field. Further investigation indicates that this kind of communication sequence is a

epetitive pattern between all three family nembers. Not only is each constantly faced vith conflicting levels of message, but each inds his response labeled as a wrong one. Family therapy with this type of family as its unrewarding aspects since almost any comment by the therapist is similarly disqualified.)

Typically if one family member says something, another indicates it shouldn't have been said or wasn't said properly. If one criticizes the other, he is told that he misunderstands and should behave differently. If one compliments the other, he is told he doesn't do this often enough, or he has some ulterior purpose. Should a family member try to avoid communicating, the others will indicate this "passivity" is demanding and indicate he should initiate more. All family members may report they always feel they are in the wrong. However, they do not necessarily directly oppose each other or openly reject one another's statements. If one suggests going to a particular place, the other may not say "No," but rather he is likely to indicate, "Why must we always go where you suggest?" Or the response may be the sigh of a brave martyr who must put up with this sort of thing. Typically the family members may not object to what one another says, but to their right to say it. Often open disagreements are prevented by an atmosphere of benevolent concern and distress that the other person misunderstands. Family members may also respond in an affirmative way when their response would be appropriate only if the person had made some other statement.

It is important to emphasize that a formal pattern is being described here which may manifest itself in various ways. A mother may be overprotective and thereby disqualify what the child does as insufficient or inadequate. She may also be rejecting and similarly disqualify what he does as unacceptable. She may also withdraw when the child initiates something as a way of disqualifying his offer. Similarly, father may viciously condemn mother or child or merely be passive when they seek a positive response from him, and in both cases he is disqualifying their communication.

Although it is not uncommon for people to disqualify each other's statements, ordinarily one would expect affirmation also to occur. However, when observing these families one does not hear even affectionate or giving behavior appreciated or affirmed. If one person indicates a desire for closeness, another indicates this is done in the wrong way or at the wrong time. (However, if one suggests separation the other will also indicate this is the wrong thing to do. Typically in these families the mother regularly threatens separation but does not leave, and the father does not often threaten separation but spends a good deal of his time away from home or "leaves" by drinking heavily while staying home.) Typically family members behave as if they are involved in what might be called a *compulsory relationship*. For example, a mother in one family indicated with some contempt that her husband was afraid to leave her because he could not stand being alone. She suggested he was cruel to her because he was angry at being tied to her. She also rejected his affectionate overtures because she considered them only a kind of bribery to insure staying with her. She herself was unable to leave him even for a night, though he was drunk several nights a week and beat her regularly. Both felt the association was not voluntary, and so neither could accept as valid any indication from the other about wanting to be together. A compulsory relationship is also typical of the parent and schizophrenic child. Since the child is considered incapable of leaving home and associating with others, his staying at home is taken as involuntary. Therefore should he indicate a desire to be with his parents, they tend to disqualify his overtures as merely a request that they not turn him out, and he finds his affectionate gestures disqualified.

Leadership in the Family

Since family members tend to negate their own and each other's communication, any clear leadership in the family is impossible. Typically in these families the mother tends to initiate what happens, while indicating either that she isn't, or that someone else should. The father will invite her to initiate what happens while condemning her when she does. Often they suggest the child take the lead, and then disqualify his attempts. These families tend to become incapacitated by necessary decisions because each member will avoid affirming what he does and therefore is unable to acknowledge responsibility for his actions, and each will disqualify the attempts of any other to announce a decision. Both the act of taking leadership and the refusal to take leadership by any one family member is condemned by the others. The family "just happens" to take actions in particular directions with no individual accepting the label as the one responsible for any action.

Alliances

Similarly, no labeled alliances are permitted in the family. A family coalition against the outside world (represented, say, by an observer), breaks down rather rapidly. Such individuals are also unable to form an alliance of two against one. Often they may appear to have such an alliance, as they tend to speak "through" one another. For example, the mother may ask for something for her child as a way of indicating that her husband deprives her, and so appear in alliance with the child. Or when the parents begin to express anger at each other, they may turn on the child for causing their difficulties and so appear in a coalition against him. Yet should the coalition be labeled, it will break down. If the child says, "You're both against me," one or the other parent will disqualify this remark and so deny the coalition. If father should say to mother, "Let's stick together on this," she is likely to say, "I'm afraid you'll back down at the last minute," or "It isn't my fault when we don't stick together." The mother and child may appear to form a coalition against the father, but should the child say, "Father treats us badly," mother is likely to say, "He has his troubles too," even though a moment before she may have been complaining to the child about how badly they were both treated by the father. Family members behave as if an alliance between two of them is inevitably a betrayal of the third person. They seem to have difficulty functioning in a two-person relationship, and as a result the separation of any one of the three from the others is a particular threat.

What confines the members so rigidly within their system is the prohibition on intimate alliances of one member with someone outside the family. As a result, the family members are inhibited from learning to relate to people with different behavior and so are confined to their own system of interaction.

Defense Against Blame

Characteristically the mothers in these families defend themselves by "transfer of blame." Such a defense follows from the mother's consistent manifestation of incongruent levels: what she does, she qualifies as not having been done or not done in that way. If the child becomes disturbed, it happens "out of the blue." If anything goes wrong, mother indicates it is the fault of someone else. In those rare instances where she does admit she did something wrong, she indicates she did it only because she was told to, or out of duty, so that it wasn't her fault. She may also indicate that something must be wrong with the other person, since he ought not to have been affected by what she did, particularly when she didn't really do it. Even when her behavior affects someone pleasantly, she must deny that it was her fault. Typically she presents herself as helplessly pushed by forces outside her control.

The fathers also follow the family rule of incongruently qualifying their messages, yet they cannot use the same denial of blame and remain with their wives. They tend to use types of defense which complement her defense, and these are of three kinds. 1) Fathers who are withdrawn and passive, accept the blame their wives put upon them, but indicate by their unresponsiveness that they are blamed falsely and do not agree with her. 2) Fathers who have temper tantrums and blame their wives, put the blame on false or exaggerated grounds so the wife can easily point out her innocence. This type of father is easily blamed since he is dominating and tyrannical, yet by going too far he indicates he is an innocent victim driven by forces outside his control. 3) Some fathers do not blame their wives but also do not blame themselves or anyone else. Such fathers make an issue of semantic difference. If asked if they or their wives are at fault, a typical reply is, "Just what do you mean by 'fault'?" By accepting no implicit definition and not defining anything themselves, they obscure everything. Any particular father may manifest these three types of defense, all of which involve both disqualification of one's own statements and a disqualification of the other person's statements.

The child tends to use two types of defense. When "sane" he may blame himself and indicate that everything wrong with the family centers in him, an attitude the parents encourage, while at the same time he gives an impression of being blamed unjustly. When "insane" he negates his own statements and those of others by denying that anything happened. Or, if it did, he wasn't there—besides it wasn't him and it happened in another place at a time when he had no control over himself. The "withdrawal from reality" maneuvers of the schizophrenic make it impossible for him to blame himself or his parents since he defines himself as not of this world.

THE "DIFFERENT" BEHAVIOR OF THE SCHIZOPHRENIC

The inability of the schizophrenic to relate to people and his general withdrawal behavior seems understandable if he was raised in a learning situation where whatever he did was disqualified and if he was not allowed to relate to other people where he could learn to behave differently. Should he be reared in a situation where each attempt he made to gain a response from someone was met with an indication that he should behave in some other way, it would be possible for an individual to learn to avoid trying to relate to people by indicating that whatever he does is not done in relationship to anyone. He would then appear "autistic." However, the peculiar distortions of communication by the schizophrenic are not sufficiently explained by this description of his learning situation. If schizophrenic behavior is adaptive to a particular type of family, it is necessary to suggest the adaptive function involved when a person behaves in a clearly psychotic way.

The recovering schizophrenic patient, and perhaps the pre-psychotic schizophrenic, will qualify what he says in a way similar to that used by his parents. His behavior could be said to be "normal" for that family. However, during a psychotic episode the schizophrenic behaves in a rather unique manner. To suggest how such behavior might serve a function in the family, it is necessary both to describe schizophrenia in terms of behavior and to suggest the conditions under which such behavior might occur. To describe schizophrenic behavior, it is necessary to translate into behavioral terms such diagnostic concepts as delusions, hallucinations, concretistic thinking, and so on.

What appears unique about schizophrenic behavior is the incongruence of all levels of communication. The patient's parents may say something and disqualify it, but they will affirm that disqualification. The schizo-

phrenic will say something, deny saying it, but qualify his denial in an incongruent way. Schizophrenic behavior described in this way has been presented elsewhere (10), but it may be summarized briefly here.

Not only can a person manifest an incongruence between levels of total message, but also between elements of his messages. A message from one person to another can be formalized into the following statement: *I (source) am communicating (message) to you (receiver) in this context.*

By his body movement, vocal inflections, and verbal statements a person must affirm or disqualify each of the elements of this message. The symptoms of a schizophrenic can be summarized in terms of this schema.

1) *Source.* A person may indicate that *he* isn't really the source of a message by indicating that he is only transmitting the idea of someone else. Therefore he says something but qualifies it with a denial that *he* is saying it. The schizophrenic may also qualify the source of the message in this way, but he will qualify his qualifications in an incongruent way. For example, a male schizophrenic patient reported that his name was Margaret Stalin. Thus he indicated that *he* wasn't really speaking, but by making his denial clearly fantastic he disqualified his denial that he was speaking. Similarly a patient may say that "voices" are making the statement. In the excerpt presented, the patient denies that *he* is responsible for the greeting card message by saying "they sell them in the canteen," and yet this denial is by its nature self-disqualifying and so his messages become incongruent at all levels.

2) *Message.* A person may indicate in various ways that his words or action are not really a message. He may indicate, for example, that what he did was accidental if he blurts something out or if he steps on someone's foot. The schizophrenic may indicate that his statement isn't a message but merely a group of words, or he may speak in a random, or word salad, way, thus indicating that he isn't really communicating. Yet at the same time he manages to indicate some pertinent points in his word salad, thus disqualifying his denial that his message is a message. In the excerpt given above, the patient says, "a card is a card,' as a way of denying the message communicated. He also says that he doesn't remember what the thing was, thus denying the message existed for him. However, both these qualifications of the message are also disqualified: the card obviously isn't merely a card, and he can hardly not remember what the thing was when he is looking at it.

3) *Receiver.* A person may deny this element in a message in various ways, for example by indicating he isn't really talking to the particular person he is addressing, but rather to that person's status. The schizophrenic patient is likely to indicate that the doctor he is talking to isn't really a doctor, but, say, an FBI agent. Thereby he not only denies talking to the physician, but by labeling the receiver in a clearly fantastic way he disqualifies his denial. Paranoid delusionary statements of this sort become "obvious" by their self-negating quality.

4) *Context.* A person may disqualify his statement by indicating that it applies to some other context than the one in which it is made. *Context* is defined broadly here as the situation in which people are communicating, including both the physical situation and the stated premises about what sort of situation it is. For example, a woman may be aggressively sexual in a public place where the context disqualifies her overtures. The typical statement that the schizophrenic is "withdrawn from reality" seems to be based to a great extent on the ways he qualifies what he says by mislabeling the context. He may say his hospital conversation is taking place in a palace, or in prison, and thereby disqualify his statements. Since his labels are clearly impossible, his disqualification is disqualified.

These multiple incongruent levels of communication differentiate the schizophrenic

from his parents and from other people. If a person says something and then negates his statement we judge him by his other levels of message. When these too are incongruent so that he says something, indicates he didn't, then affirms one or the other, and then disqualifies his affirmation; there is a tendency to call such a person insane.

From the point of view offered here, schizophrenia is an intermittent type of behavior. The patient may be behaving in a schizophrenic way at one moment and in a way that is "normal" for this type of family at another moment. The important question is this: Under what circumstances does he behave in a psychotic way, defined here as qualifying incongruently all his levels of message?

In this excerpt of a family interaction, the patient shows psychotic behavior when he is caught between a therapist pressuring him to affirm his statements and his parents pressuring him to disqualify them. From this point of view, the patient is faced with a situation where he must infringe the rules of his relationship with the therapist or infringe his family rules. His psychotic behavior can be seen as an attempt to adapt to both.[3] By behaving in a psychotic way he could 1) affirm his statement about his mother, thus following the rule in the therapeutic relationship for affirmative statements, 2) disqualify his critical statement of the mother, thus following the family rules that mother is not to be blamed in a way so that she can accept blame and all statements are to be disqualified, and 3) synthesize these two incompatible theses by indicating that the message wasn't his (it wasn't really a message, he couldn't remember it, and he didn't really send it). It can be argued that psychotic behavior is a sequence of messages which infringe a set of prohibitions but which are qualified as not infringing them. The only way an individual can achieve this is by qualifying incongruently all levels of his communication.

The need to behave in a psychotic way would seem to occur when the patient infringes a family prohibition and thereby activates himself and his parents to behave in such a way that he either returns within the previous system of rules or indicates somehow that he is not infringing them. Should he successfully infringe the system of family rules and thereby set new rules, his parents may become "disturbed." This seems to occur rather often when the patient living at home "improves" with therapy. When improving in therapy he is not only infringing the family prohibitions against outside alliances but he may blame the mother in a reasonable way and affirm his statements or those of others. Such behavior on his part would shatter the family system unless the parents are also undergoing therapy. The omnipotent feelings of the schizophrenic patient may have some basis, since his family system is so rigid that he can create considerable repercussions by behaving differently.

A patient is faced with infringing family prohibitions when 1) two family prohibitions conflict with each other and he must respond to both, 2) when forces outside the family, or maturational forces within himself, require him to infringe them, or 3) when prohibitions special to him conflict with prohibitions applying to all family members. If he must infringe such prohibitions and at the same time not infringe them, he can only do so through psychotic behavior.

Conflicting sets of prohibitions may occur when the individual is involved with both mother and therapist, involved with a therapist and administrator in a hospital setting (19), or when some shift within his own

[3] An attempt to synthesize two incompatible situations by a perceptual change is suggested in Weakland and Jackson (22). Describing an incident during a psychotic breakdown, they say, "Psychotic delusions allowed him to free himself of decision making. For example, the cab driver is a hospital attendant in disguise. There is no problem in Home vs. Hospital; it has been resolved."

family brings prohibitions into conflict. This latter would seem the most likely bind the patient would find himself in when living at home, and an incident is offered here to describe psychotic behavior serving a function in the family.

A twenty one year old schizophrenic daughter arrived home from the hospital for a trial visit and her parents promptly separated. The mother asked the girl to go with her, and when she arrived at their destination, the grandmother's home, the patient telephoned her father. Her mother asked her why she turned against her by calling the father, and the daughter said she called him to say goodbye and because she had looked at him with an "odd" look when they left. A typical symptom of this patient when overtly psychotic is her perception of "odd" looks, and the problem is how such a message is adaptive to the family pattern of interaction.

The incident could be described in this way.. The mother separated from father but qualified her leaving incongruently by saying it was only temporary and telling him where she was going. The father objected to the mother's leaving, but made no attempt to restrain her or to persuade her to stay. The daughter had to respond to this situation in accord with the prohibitions set by this family system: she had to disqualify whatever she did, she had to disqualify what her mother and father did, she could not ally with either mother or father and acknowledge it, and she could not blame the mother in such a way that the mother would accept the blame.

The girl could not merely do nothing because this would mean remaining with father. However, by going with the mother she in effect formed an alliance and so infringed one of the prohibitions in the family system. The girl solved the problem by going with mother but telephoning her father, thus disqualifying her alliance with mother. However, her mother objected to the call, and the daughter said she only called him to say goodbye, thus disqualifying her alliance with father. Yet to leave it this way would mean allying with mother. She qualified her statement further by saying she called father because she gave him an "odd look" when she left him. By having an odd look, she could succeed in not siding with either parent or blaming mother. She also manifested schizophrenic behavior by qualifying incongruently all levels of message and thereby adapting to incongruent family prohibitions. Previously the girl could withdraw to her room to avoid the alliance problem, but when mother stopped staying home while saying she was going to leave, and left while saying she was not really leaving, the girl was threatened by a possible alliance whether she went with her mother or stayed at home. Her incongruent, schizophrenic behavior would seem necessary to remain within the prohibitions of the family at those times. If one is required to behave in a certain way and simultaneously required not to, he can only solve the problem by indicating that *he* is not behaving at all, or not with this particular person in this situation. The girl might also have solved the problem by disqualifying her identity, indicating the context was really a secret plot, indicating that what she did was what voices told her to do, or speaking in a random or word salad way. In other words, she could both meet the prohibitions in the family and infringe them only by disqualifying the source of her messages, the nature of them, the recipient, or the context, and so behave in a psychotic fashion.

It is important to emphasize that schizophrenic behavior in the family is adaptive to an intricate and complicated family organization which is presented here in crude simplicity. The network of family prohibitions confronts the individual members with almost insoluble problems. This particular incident was later discussed with the parents of this girl, and the mother said her daughter could have solved the problem easily. She could have stayed with father and told

him he was wrong in the quarrel which provoked the separation. This would seem to be the mother's usual way of dealing with this kind of situation—she stays with father while telling him he is wrong. However, the mother leaves herself out of this solution by ignoring the fact that she asked her daughter to go with her. This request was even more complicated—the mother asked the daughter to go with her during a period when the mother was saying the daughter must return to the hospital because she could not tolerate associating with her. When the parents reunited later that week, the girl was returned to the hospital because mother said she could not stand daughter in the room watching her, and she could not stand daughter out of the room thinking about her.

The approach offered here differs from the usual psychodynamic explanations. It would be possible to say that the mother's concern about leaving the daughter with the father, even when she could not tolerate the girl's company, might center in the family's concern about incestuous desires between father and daughter. Such a psychodynamic hypothesis could be supported. Later in therapy the father and daughter planned a picnic alone together when they decided they should see more of each other without the mother being present. The evening of the day this was arranged, the therapist received a telephone call from the disturbed mother. She reported that she and her husband had been drinking and arguing all evening and she reported that her husband had told her it was natural for a father to have sexual relations with his daughter. The husband's report was that he had not said this. (He had said it was natural for a father to have sexual *feelings* for his daughter, but this did not mean he would do anything about it.) This crisis over suggested possible incest could be explained by saying that the threat of closeness between father and daughter aroused forbidden incestuous desires in them. However, it was the mother who made an issue over the possible incest. From the psychodynamic point of view, hints and discussions of incest would represent unconscious conflicts. From the point of view offered here, this type of discussion is an aspect of family strategy. To label a relationship as possibly incestuous would be one further way of enforcing a prohibition on alliances between father and daughter. Such a maneuver is similar to one where the mother inhibits a relationship between father and daughter by insisting that the father should associate more with the daughter, thus arousing his negative behavior as well as the issue of whether he neglected the daughter. The approach offered here does not deal with supposed motivating forces within the individuals concerned, but with the formal characteristics of their behavior with each other.[4]

THE FUNCTION OF FAMILY BEHAVIOR

The difficulty for this type of family would seem to lie in the inflexibility of their family system. They often maintain the system despite the sturdy attempts of a family therapist to help them deal with each other more amicably. Apparently family members gain only discord, dissension, and a constant struggle with one another, or periods of withdrawal in a kind of truce, yet they continue so to behave. It would be possible to postulate psychodynamic causes for this type of behavior, or self-destructive drives could be sought, but an attempt is made here to develop an alternative descriptive language centering on the peculiar sensitivity of people to the fact that their behavior is governed by others.

[4] Although statements in the form of family rules deal with observable behavior and are therefore verifiable, the verification depends to some extent upon the skill of the observer. Such statements are more reliably documented by placing the family in a structured experimental situation where the results depend upon whether or not the family functions under certain prohibitions. The Bateson project is now beginning a program of experiments with families similar to the small group experiments of Alex Bavelas.

When people respond to one another they inevitably influence how the other person is to respond to them. Whatever one says, or doesn't say, in response to another person is a determinant of the other person's behavior. For example, if one criticizes another, he is indicating that critical statements from him are permissible in the relationship. The other person cannot not respond, and whatever response he makes will govern the critical person's behavior. Whether the criticized one gets angry, or weeps helplessly, or passively accepts the criticism, he must either be accepting the rules or countering with other rules. These rules for relationships which people establish with each other are never permanently set but are in a constant process of reinforcement as the two people interact and govern each other's behavior.

Every human being depends upon other people not only for his survival but for his pleasure and pain. It is of primary importance that he learn to govern the responses of other people so they will provide him satisfaction. Yet a person can only gain satisfaction in a relationship if he permits others to cooperate in setting the rules for the relationship and so influence and govern him. The person who dare not risk such control over him would seem to provoke his own misery by attempting to avoid it. If someone has suffered a series of hurts and frustrations with people he trusted, he tends to try to become independent of people—by not getting involved with them in such a way that they can gain control over his feelings or his behavior. He may literally avoid people; he may interact with them only on his own terms, constantly making an issue of who is going to circumscribe whose behavior; or he may choose the schizophrenic way and indicate that nothing he does is done in relationship to other people. In this fashion he is not governing anyone and no one is governing him.

The family of the schizophrenic would seem to be not only establishing and following a system of rules, as other families do, but also following a prohibition on any acknowledgement that a family member is setting rules. Each refuses to concede that he is circumscribing the behavior of others, and each refuses to concede that any other family member is governing him. Since communication inevitably occurs if people live together, and since whatever one communicates inevitably governs the behavior of others, the family members must each constantly disqualify the communications of one another. Should one affirm what he does or what another does, he risks conceding that he is governed by the other with all the consequences that follow being disappointed again by an untrustworthy person. Schizophrenic behavior can be seen as both a product and a parody of this kind of family system. By labeling everything he communicates as not communicated by him to this person in this place, the schizophrenic indicates that he is not governing anyone's behavior because he is not in a relationship with anyone. This would seem to be a necessary style of behavior at times in this type of family system, and it may become habitual behavior. Yet even psychotic behavior does not free the individual from being governed or from governing others. The person who insists that he does not need anyone at all and is completely independent of them requires people to put him in a hospital and to force feed him. To live at all one must be involved with other people and so deal with the universal problem of who is going to circumscribe whose behavior. The more a person tries to avoid being governed or governing others, the more helpless he becomes and so governs others by forcing them to take care of him.

A MODEL FOR DIFFERENTIATING TYPES OF FAMILIES

What is lacking in the study of interpersonal relations is a method of describing, by way of some analogy, the process which takes place when two or more people inter-

act with one another. Although there are models for inner activity, e.g., the id-ego-superego metaphor, there is not yet a model for human interaction. Implicit in the approach to the schizophrenic family offered here there is such a model. The essential elements of it are: 1) the proposition that human communication can be classified into levels of message, 2) the cybernetic idea of the self-corrective, governed system. If a family confines itself to repetitive patterns within a certain range of possible behavior, then they are confined to that range by some sort of governing process. No outside governor requires the family members to behave in their habitual patterns, so this governing process must exist within the family. A third essential point is that when people respond to one another they govern, or establish rules, for each other's behavior.

To describe families, the most appropriate analogy would seem to be the self-corrective system governed by family members influencing each other's behavior and thereby establishing rules and prohibitions for that particular family system. Such a system tends to be error-activated. Should one family member break a family rule, the others become activated until he either conforms to the rule again or successfully establishes a new one.

A system of three organisms each governing the range of behavior of the other two, and each communicating at multiple levels, is both a simple idea and a complex model. Yet such an approach offers a general theoretical framework within which the specific rules of any one type of family system can be classified. The rudiments of such a system are suggested here at the most general level. The family of the schizophrenic is a particularly good model for this approach because of the narrow limits of their system. Our few preliminary observations of families containing children without symptoms, children who are delinquent, and children with asthma, lead us to believe that the interaction in the family of the schizophrenic is unique. Members of other types of family sometimes disqualify each other's statements but only under certain circumstances. Mutual affirmation will also occur. We have observed, for example, parents of an asthmatic child finishing each other's sentences and having this approved. Should the father of a schizophrenic finish the mother's sentence, it seems inevitable that she would indicate he provided the wrong ending. In other families leadership will stabilize into a pattern accepted by family members. Certain alliances will be allowed in some types of families, notably the delinquent where the child is capable of forming labeled alliances in gangs outside the family. In the family of the schizophrenic the range of behavior is as limited and inflexible as is the behavior of the schizophrenic in contrast to other people.

The observation of this type of family system inevitably takes place after the child has manifested a schizophrenic episode. Whether the family behaved in a similar way prior to his diagnosis is unknowable. In this sense it is difficult to assert that the interaction in his family "caused" schizophrenia. There are two possibilities. 1) If the family is a self-corrective system and the child behaves intermittently in a schizophrenic way, then schizophrenic behavior is a necessary part of this family system. 2) Alternatively, schizophrenic behavior as a result of a particular family system which has been disrupted by forces outside the system, such as maturation of the child or environmental influence. The family then reorganizes a new system which includes the schizophrenic behavior as an element, and this is what we are presently examining. The evidence leads us to believe that schizophrenic behavior in the child is reinforced by the present family system.

Although psychotic behavior may serve a function in a family system, a risk is also involved. The patient may need to be separated from the family by hospitalization

and so break up the system, or he may enter therapy and change and so leave the system. Typically the parents seem to welcome hospitalization only if the patient is still accessible to them, and they welcome therapy for the patient up to the point when he begins to change and infringe the rules of the family system while acknowledging that he is doing so.

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PERSONALITY DIFFERENCES BETWEEN MORE AND LESS COMPETENT PSYCHOTHERAPISTS AS A FUNCTION OF CRITERIA OF COMPETENCE

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INTRODUCTION

What sort of personality is best suited to the practice of psychotherapy? The answer to this question may depend on the criteria of competence employed. The aims of the present paper are a) to discuss the concept of competence in occupational psychology generally and in the field of psychotherapy specifically with particular reference to supervisors' ratings, b) to present data showing that the personality traits related to one criterion of competence in psychiatry may not be the same as those related to another criterion, not by chance, but because the point of view of the raters may differ, and c) to discuss the implications of the two different concepts of competence revealed by our data.

Generally speaking, the criterion most commonly used in studies of occupational competence[2] is the supervisors' rating. The validity of this criterion depends on how good a position the supervisor is in to judge the worker's performance, and on how complex the factors are that he must take into account in making his judgment. These conditions vary a good deal with the nature of the occupation itself. To clarify this, let us consider a tentative list of factors that may enter into the concept of success or competence:

1) Making money.
2) Satisfying employers or supervisors.
3) Satisfying the client, if any.
4) Performing well technically, doing a good job. This may mean effectiveness (*i.e.*, getting results), or style (*i.e.*, craftsmanship).

These factors are sometimes distinct, sometimes fused. In the private practice of medicine, for example, the client is also the employer, so that satisfying one is identical with satisfying the other. There may be, however, a difference between pleasing the client and doing a good job. In the case of a private secretary, the employer is also the client. Here again there may be a difference between pleasing the client and doing a good job, as is attested to by the well-known jokes about choosing a secretary for her looks.

Now, all these factors are probably interrelated to a greater or a lesser degree; however, when a supervisor's ratings are used it is usually assumed that his rating is an approximate index to the whole complex of factors in competence, failing perhaps in precision, but not by reason of bias. This assumption loses its validity in cases where for some reason pleasing the supervisor represents a set of talents different from those required in job performance. In Plato's *Republic*, Socrates says, "and the art of payment has the special function of giving pay: but we do not confuse this with the other arts ... nor would you say that medicine is the art of receiving pay because a man takes fees when he is engaged in healing." If we translate the "art of receiving pay" into "the art of getting ahead," or using the more sophisticated terms of modern social science, into "the art of

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[2] An excellent survey of research in this field may be found in Roe's *The Psychology of Occupations* (10).

making an impression on the relevant reference group," if becomes more evident that we do in fact confuse these "arts."

Clearly, jobs differ greatly in the ease with which performance can be evaluated. A measure of a miner's output or a record of sales may suffice to tell you how good a person is at the job. There are definite *results* to go by and the goal is never in question. In administrative posts on the other hand, such as the vice-presidency of a large corporation, the choice of a goal is itself a part of the job and the question of just what is to be measured becomes very difficult.

Even when the goal of the work is easily defined, supervisors' ratings may differ from objective criteria of work performance. Some slight evidence of this is provided by a study of automobile salesmen. Correlations between a personality test on one hand, and sales records and supervisors' ratings on the other hand, were calculated. These correlations differed, even though the supervisors were presumably in possession of the facts about the sales records of the salesmen. This suggests that the supervisors were rating something other than results (10, p. 180).

A peculiarity of psychotherapy in this context is that there is a fairly clear-cut result against which the performance can be gauged, yet this result is difficult to measure in practice. The test, of course, is the benefit to patients. Whatever the difficulty of evaluating this benefit, the objective is perfectly clear and the practical problems are not insuperable (6, 7). But to overcome them, one would logically study the patient and not the therapist. Except in a mental hospital, the supervisor can rarely observe the therapist handling the patient. Even if we could observe the therapist's performance directly, as occasionally is the case when recordings, movies, or one-way screens are available, we still do not know the relation between what we observe and the cure of the patient. We can judge only on a theory about the *style* or *technique* of the performance. In some types of performance, style *is* the objective, not results—in playing the violin, for example. But in psychotherapy, style becomes a criterion only on the assumption that certain styles work better than others in achieving the eventual goal.

Several studies have been made using the criterion we have caled *style*. In one, recorded interviews are analyzed for changes in the amount of patient's overt hostility. It is assumed that helping the patient to express his hostility is correlated with improvement. In another study, rapport between the patient and the therapist is rated by trained observers from recordings of interviews (3). Whether or not rapport as defined by the observers is related to cure is not known. Several studies have shown that experienced therapists resemble each other in style more than do beginners (11). It is possible that training enables us to conform more and more to a tradition or a theory about ways of behaving with patients, but there is no evidence at present that style in this sense is correlated with results.

The distinction between the various "arts" is especially pertinent in psychotherapy. It makes a difference, in terms of research methods and goals, whether we want to know who is successful in "getting ahead," or who is effective in "curing" a patient, or who is a skilled craftsman. The question of effectiveness is of particular concern, perhaps, because of the hope that by studying the man who is good at "curing" patients we might get at the secret of what it is that cures them.

If, on the other hand, the objective is more practical, to improve the selection of trainees in order to diminish the failure rate, or to increase the satisfaction of the school with its trainees; supervisors' ratings are appropriate, as, for example, in the extensive study of psychiatric residents at the Menninger School of Psychiatry which

was conducted over a period of several years (4, 5). Interviews and batteries of psychological tests were given at the beginning of the resident's career. The principal criterion of success was an average of supervisors' ratings at the end of two years on overall performance as a psychiatric resident. Using this criterion to identify good and poor psychiatric residents, a comparison was made of the supervisors' comments on 30 of the best and 30 of the poorest men in a total of 247. The better therapists were described as reliable, practical, willing to learn, able to develop, sensitive, objective, highly intelligent, mature, honest, sincere, clear in their thought and expression (4, Vol. 1, ch. 6; 5). The authors make the comment that possibly the supervisors made the primary judgment "this is a good man," and then filled in the picture with more references to their own stereotypes than to reality.

"Stereotype" is here used not derogatively but to express the idea of a commonly held concept. These stereotypes vary from one group to another. It is not too much to assume that the kind of person who would fit into, say, the early Vienna Psychoanalytic Society is not the same as the kind of person who would best fit into the Menninger School of Psychiatry.

Supervisors' ratings have another peculiarity: they are apt to be heavily weighted with evaluations of the subject's attitude toward authority, because of the very nature of the relationship between the supervisor and the subject. This emphasis may be especially inappropriate in judging a psychotherapist because in the private practice of psychotherapy there is a conspicuous absence not only of any authority but even of any witnesses.[3] Of course, one's attitudes towards authority may be related to one's behavior as an authority, but hardly in a one-to-one relationship. A person may have difficulty with the role of the subordinate, with that of the superordinate, or with both, or with neither, but it is difficult to infer his success at one from his success at another. There is some evidence that in practice supervisors react more negatively to aggressiveness or arrogance than they realize. In their book on the Menninger study, Holt and Luborsky remark that, "expert opinion does not condemn (hostility), and our evidence is that good residents as well as poor ones may display a fair amount of hostility, yet the studies of erroneous prediction . . . showed that occasionally interviewers formed mistakenly negative impressions of aggressive applicants" (4, Vol. 1, p. 291).

RESEARCH REPORT

The subjects were 40 psychiatric residents in a large psychiatric hospital. Each of the subjects was rated according to two sets of competence ratings. One will be referred to as T-ratings (therapeutic competence rating); the other will be referred to as G-ratings (general competence ratings). T-ratings were obtained by asking three supervisors to rate the subjects on a 5-point scale as to competence in psychotherapy with schizophrenics. These supervisors were all very much interested in psychotherapy and had all worked with the subjects for several hours, discussing their therapy cases in detail with them. (Correlations between the three supervisors' ratings were .71, .79 and .81.) G-ratings were obtained by pooling all the official, confidential reports that were made at least every six months on each resident. These reports came from many different sources, covering the resident's work on many different wards and in outpatient clinics outside of the hospital. The reports were supposed to cover all aspects

[3] Holt & Luborsky (4), in comparing personality traits found desirable according to their empirical data with those recommended by the consensus of experts, say, "The capacity for good relationships with co-workers was confirmed all down the line, though much less was said directly on this point in the opinions on necessary qualities of psychotherapists and psychoanalysts who so often work alone."

of the resident's work: relations with staff, nurses, patients, and supervisors, ability to organize work, integrity, responsibility, promptness, etc.[4] An average of G-ratings for each subject was taken, and the subjects were ranked according to these averages. They were then divided into two equal groups, the Highs and the Lows. The same was done for the T-ratings.

Several methods of personality description were used on the subjects; the one relevant to the present discussion was a self-descriptive Q-sort consisting of 108 items, each describing a personality trait. This set of items was not especially designed with the present purpose in mind, but was an inventory borrowed from another study (6). It had been designed to cover a wide range of personality traits. The subjects were to sort these items into nine categories, ranging from 1, most characteristic of themselves, to 9, least characteristic of themselves. Thus each subject had a score on each item. The Mann-Whitney U test was used to determine whether the High T's had significantly lower scores than the Low T's on each of the 108 items. The same was done for the High and Low G's. The items which passed the test are shown in Tables 1 and 2.

In interpreting Table 1 it should be remembered that these items are not necessarily those most characteristic of the self-image of the Highs or the Lows, but rather are the items on which the Highs and the Lows tend to differ most. Furthermore, we must keep in mind that these are self-descriptions by people who know they are being studied, *qua* psychiatric residents, (rather, say, *qua* men 25 to 40, two years out of military service). Our data represent what these residents are willing to say about themselves to certain people conducting the study. The identity of those conducting the study may have had some

[4] These ratings were quantitative, using one of two different forms: an 8-point rating, on over-all competence (following a whole page of 8-point ratings on various aspects of competence), and a five-step rating using the words "poor, fair, good, very good, and superior." The frequency distributions of these ratings led us to reduce them all to a four-point scale, and scores on these four-point scales were averaged arithmetically. The averages were then ranked.

TABLE 1

Self-Description of Subjects with High or Low T-Ratings

(Items differentiating Highs and Lows at probabilities of .05 or better according to the Mann-Whitney U test)*

A. Characteristic of the Highs	
1.	Expresses his hostilities directly. (.001)
2.	Is sarcastic and cynical. (.01)
3.	Makes free use of facial expression and gesture in expressing himself. (.05)
4.	Characteristically pushes and tries to stretch limits; sees what he can get away with. (.05)
5.	Has a rapid personal tempo; thinks and acts at a fast rate. (.05)
6.	Has high aspiration level for self; ambitious, wants to get ahead. (.025)
7.	Seeks out members of the opposite sex. (.01)
8.	Is psychologically oriented and sophisticated; evaluates the motivation of others in interpreting situation. (.025)
9.	Is able to sense other person's feelings; is intuitive, emphatic, feeling type of person. (.05)
10.	Is able to convey his personal feelings and inner thoughts. (.05)
B. Characteristic of the Lows	
11.	Behaves in an indulgent and forgiving way. (.05)
12.	Is suggestible; overly responsive to other people's evaluations rather than his own. (.025)
13.	Tends to be conciliatory in his interpersonal relationships; accepts and fosters compromises; tends to be appeasing. (.025)
14.	Gives up and withdraws in the face of frustration and adversity. (.025)
15.	Has a brittle ego-defense system; has a small margin of integration; precarious self-control. (.01)
16.	Feels separate and unconnected; feels a lack of personal meaning. (.025)
17.	Is retentive and withholding. (.05)
18.	His anxiety and tension find outlet in bodily tension and dysfunction. (.025)

* Probabilities of this results' arising by chance are given in parentheses.

influence, even though the residents were told that anonymity of the subjects would be preserved.

Items 1 through 7 in Table 1 connote mainly aggressivity, with emphasis on confidence and unabashed self-expression. Items 8 and 9 fit into the conventional concept of the psychiatrist and as such indicate self-confidence on the part of the Highs. Probably both Highs and Lows are aware that these are "good" traits, but the Lows are hesitant to say that they have them. Items 14 and 15, more characteristic of Lows, are striking admissions of insecurity, as are in fact most of the items under B.

That the Highs are more self-confident than the Lows might seem almost a commonplace finding. Self-confidence goes with "adjustment," "success," and many other desirable things. The other items however give a more specific idea of what this self-confidence may mean. Aggressive self-assertion may possibly be a little overdone in the Highs' picture of themselves. The Lows on the other hand are willing to see themselves as weaker and more passive, which may mean that they *value* the "Christian" virtues more, being forgiving and conciliatory and modest for example, and thus that they do think well of themselves after all. Or it may be that to be aggressive is not as important to them as it is to the Highs.

If we turn now to the same subjects grouped according to their G-ratings (Table 2), a different picture emerges. The Highs here still show some of the self-confidence we found on the T-ratings. Items 1, 2, and 3 are the same. But Item 4, overcontrol, is quite the opposite from Item 4 in Table 1, which describes stretching limits. Item 6 is closely related to one characterizing Lows on T-ratings: Item 18. Both represent a denial of anxiety and conflict.

The Lows in Table 2 are similar to those in Table 1 in weakness and passivity, (see Items 7–10). Item 12, "acting out," however, is similar to "stretching limits," which is more characteristic of the Highs in Table 1.

TABLE 2

Self-Description of Subjects with High or Low G-Ratings

(Items differentiating Highs and Lows at probability of .05 or better according to the Mann-Whitney U test)*

A. Characteristic of the Highs
1. Has a rapid personal tempo; thinks and acts at a fast rate. (.025)
2. Is able to sense other people's feelings; is intuitive, emphatic, feeling type of person. (.05)
3. Seeks out members of the opposite sex. (.01)
4. Tends toward over-control of his needs and impulses; binds his tensions unnecessarily. (.05)
5. Keeps people at a distance; avoids close interpersonal relationships. (.025)
6. Handles anxiety and conflicts by refusing to recognize their presence. (.05)
B. Characteristic of the Lows
7. Gives up and withdraws in the face of frustration and adversity. (.05)
8. Is self-defeating; places self in an obviously bad light; has self-destructive tendencies. (.01)
9. Is self-indulgent. (.025)
10. Arouses parental feelings in others. (.01)
11. Spends a good deal of time in personal fantasy; day-dreams and impossible fictional speculations. (.025)
12. His various needs tend toward relatively direct unmodulated expression; unable to delay gratification; acts out. (.025)

* Probabilities of this result arising by chance are given in parentheses.

It is not difficult to imagine a rationale for the differences between Tables 1 and 2. Persons who see themselves as overcontrolled, rather than as expressive or ebullient, who emphasize being accepted by others rather than expressing hostilities directly, are more likely to fit into an institution, to please more supervisors, and to get along with people generally. If we examine those subjects who received opposite ratings from T-raters and G-raters, the conclusion is to some extent confirmed. Here are some

comments on those high on T-ratings and low on G-ratings: "could be more diplomatic," "has improved—is more tolerant of regulations—more willing to conform." Some comments on those high on G-ratings and low on T-ratings include: "has lost much of his anxiety," "is conscientious and careful," "assumes responsibility and organizes his work well."

To test our interpretation of the single items listed above, it was decided to study the following factors:

Self-confidence
Expressive and manipulative skills
Dependence and passivity
Moralistic self-discipline
Relatedness vs. withdrawal
Paranoid personality.

As a measure of self-confidence a Pearsonian r was calculated between the self-sort and the ideal self-sort for each subject. The Mann-Whitney U test was used to test the relationship between this r and competence ratings.

As a measure of *expressiveness*, five judges—all either psychiatrists or clinical psychologists—were asked to select from the 108 at least 15 items whose content seemed to be relevant to the trait. The trait was described to the judges as follows: "The ability to express oneself openly and aggressively, lack of fear of revealing self, ability to be outgoing in either self-exhibiting or a manipulative way." The items agreed on by at least four out of five judges were selected as descriptive of the trait. They were as follows:

Behaves in an ostentatious and exhibitionistic manner.
Is skilled in the techniques of play, pretending and humor.
Behaves in an assertive fashion.
Is an expressive, ebullient person; colorful.
Appears straightforward, forthright, candid in dealings with others.
Expresses his hostilities directly.

Items selected by the judges as relevant to *dependence and passivity* were:

Is readily dominated by others; submissive.
(−) Behaves in an assertive fashion.
Lets others people take advantage of him; allows exploitation.
Is suggestible; overly responsive to other people's evaluations rather than his own.
Seeks out and tries to relate to parent figures.

Items selected as relevant to moralistic *self-discipline* were:

Tends toward over-control of his needs and impulses; binds his tensions excessively; delays gratification unnecessarily.
Is moralistic and strict; judgmental.
(−) His various needs tend toward relatively direct, unmodulated expression; unable to delay gratification; acts out.
(−) Is self-indulgent.
Behaves in an ethically consistent manner.

Items selected as relevant to *relatedness* were:

Is a talkative individual.
(−) Feels separate, unconnected; feels a lack of personal meaning.
Seems to be aware of his social stimulus value.
Has warmth; has the capacity for close relationships.
(−) Keeps people at a distance; avoids close interpersonal relationships.
Emphasizes being accepted by others; needs people around him; gregarious; seeks relatedness to others.
Is socially perceptive; responsive to a wide range of social clues.
Is able to sense other person's feelings; is intuitive; emphatic, feeling type of person.
Seeks out members of the opposite sex.
Is able to convey his personal feelings and inner thoughts.

Emphasizes communication through action and non-verbal behavior.

Items selected as relevant to paranoid personality were:

Tends to transfer blame.

Has a brittle ego-defense system; has a small margin of integration, precarious self-control.

Keeps people at a distance; avoids close interpersonal relationships. Is distrustful of people in general; questions their motivations.

Is jealous; sees many potential rivals.

Emphasizes his personal privacy; prevents intrusion; is secretive about his personal life.

Tends to project his own feelings and motivations onto others.

Interprets basically simple and clear-cut situations in complicated and particularizing ways.

Results are shown in Table 3.

It is of interest to note that the items in Table 1 are not the same as the items which the judges selected as most desirable when they were asked to sort for the Ideal Therapist. The items they selected which did coincide with those in Table 1 were the more conventional ones:

Favorable Items

Is psychologically oriented and sophisticated; evaluates the motivation of others in interpreting situations.

Is able to sense other person's feelings; is intuitive, emphatic, feeling type of person.

Is able to convey his personal feelings and inner thoughts.

Unfavorable Items

Is retentive and withholding.

Feels separate, unconnected; feels a lack of personal meaning.

Gives up and withdraws where possible in the face of frustration and adversity.

TABLE 3

Differences between Highs and Lows in Their Scores on Scales Describing Certain Traits (using the Mann-Whitney U Test)

	T-Ratings	G-Ratings
Self-Confidence*	p = .025	n s d
Passivity†	p = .025	n s d
Expressiveness	p = .01	n s d
Self-Discipline	n s d	p = .025
Relatedness	n s d	n s d
Paranoid Personality	n s d	n s d

* Differences are in the direction of "more characteristic of the more competent."

† Differences are in the direction of "more characteristic of the less competent."

Has a brittle ego-defense system; has a small margin of self-control.

It should be evident then, that the judges were not aware of the nature of the stereotypes they held. Methodologically, this introduces an interesting approach to the study of stereotypes: instead of asking for conscious formulations of the Good Therapist, one might ask judges to select people who they think are Good Therapists and then study those people.

DISCUSSION

The suggestion was made above that T-raters differed from G-raters in the type of resident they were likely to value, largely because T-raters were thinking mainly in terms of therapy, G-raters more in terms of fitting into an organization. This emphasizes an ambiguity in the goals of our training programs. What particular role are we training people for? In university graduate schools, for example, even though most of the students are destined to be teachers, their professors are interested almost exclusively in potential research workers and especially in the most brilliant ones. Similarly, despite the fact that most psychiatric residents eventually make a career of the private practice of psychotherapy, and despite the greater prestige given to the practice of psychotherapy and especially to that

of psychoanalysis than to institutional psychiatry, relatively little of their training is devoted to this aspect of the job.

In medical schools generally, the teacher and research worker have more prestige than the mere practitioner; nevertheless, the job of the medical schools is recognized to be that of training practitioners. Every student is important because his function is going to be an important one in the community and the profession has an obligation to keep up its standards to justify its claim to independence from public control. Accordingly the atmosphere in medical training puts far more emphasis on learning the trade, less on making innovations than the atmosphere in academic circles.

The contrast between High T's and Low G's may be compared with the differences in several ideal images of the business executive as described in *The Organization Man* (13).

In that book, Whyte discusses the newer emphasis on group relatedness, on the *well-rounded* person, and the soft-pedalling of aggressive individualism, of driving, dedicated, hard work—the latter representing the older executive ideal. The author suggests that the latter is not just an anachronistic remnant from pioneer days, but is still very much alive, providing in fact most of the top leadership in industry, a necessary part of our culture which we are in vain trying to pretend we have outgrown. The comparison between business executives and psychotherapists may seem farfetched; the main analogy is the possible difference between outstanding performance and good average performance.

In the study mentioned earlier of psychiatric residents at the Menninger School of Psychiatry there was a good deal of discrepancy between the predictions at the beginning of the residents' careers and the evaluations after two years of residency. There is an impressive resemblance between these discrepancies and the differences we found between T-ratings and G-ratings. The predictions were made by several judges who went over all the material that had been collected on each resident at the beginning of his career: interviews, evaluations, and psychological tests. The final evaluation of competence was ratings by supervisors after at least two years of residency, and this constituted the criterion of success. Because of the many "errors" of prediction the judges were asked to go over their predictions and consider the reasons for the discrepancy. One of the judges made the following observations (4, Vol. 2, pp 247–248):

> "My general conception of what kind of person makes a good psychiatrist contained one serious error: I thought that free expression of affect was desirable, and overcontrol was undesirable. Actually, as we have pointed out in several places in this book, the opposite tended to be true."
>
> "Another of my blind spots was for the positive uses of authoritarianism. Reaction formations and moralistic control worked better for a number of subjects than I thought they could. If a man had a strongly authoritarian character structure, I was likely to rate him low."
>
> "Several times, I laid too much emphasis on poor self-confidence. Though I think that I was usually not too far off in my estimates of it, self-confidence turned out not to be as essential as I had thought it was for psychiatrists."

From these excerpts it would seem that what the writer regarded as error was very similar to the difference between T-raters and G-raters in their unconscious stereotype of a good therapist: those who appealed to T-raters tended to see themselves as more self-confident and more expressive, while those who impressed the G-raters tended to see themselves as more controlled and less aggressive. Does this mean that the judges who made the predictions in the Menninger study were thinking more in terms of psychotherapeutic competence than the supervisors who made the criterion ratings? Such a view seems negated by the

high correlations (.90) between supervisors' ratings on Over-all Competence and their ratings on Psychotherapeutic Competence (4, Vol. 2, p. 105). Furthermore, Holt and Luborsky state elsewhere, "we found that supervisors' opinions were heavily weighted with their judgments of a man's psychotherapeutic ability.... There was a very sizeable halo effect at work" (4, Vol. 2, p. 150).

No doubt the same halo effect would have operated had we asked our G-raters to rate psychotherapeutic competence and our T-raters to rate administrative competence. Possibly a difference can be demonstrated only when the raters are situated at a different vantage point, so to speak: T-raters in the therapy supervision conference, G-raters on general ward duty; or, as in the Menninger study, the judge in his office looking at tests and interviewers' reports, the supervisor mixing with the subjects in a teaching capacity.

There is another parallel to our findings in the Menninger study. A composite of routine official ratings very similar to our G-ratings was put together. This so-called MSP criterion showed a correlation of .81 with supervisors' ratings on Over-all Competence, but the correlation between the MSP criterion and supervisors' ratings of psychotherapeutic competence was only .50 (4, Vol. 2, p. 65). In our study, the correlation between T-ratings and G-ratings was .46.

Another interpretation of our data is that the difference between the opinions of T-raters and G-raters is due to the T-raters' focus on therapy with *schizophrenic patients*, which is generally regarded as requiring more active participation by the therapist. A study made at the Henry Phipps Clinic at Johns Hopkins by Whitehorn and Betz (12) tends to confirm this view. This study is one of the few to use results with patients as the criterion of competence. Thirty-five therapists were found who met the criterion of having treated at least four schizophrenics, four depressives, and four neurotics. They were ranked according to the improvement of their schizophrenic patients (evaluated by the ratio of the number discharged to the number treated). The seven highest on this ranking were compared with the seven lowest as to the type of relationship they had with their patients, as revealed by their progress notes. The top group were characterized by a better grasp of the patient's motivation, by the goals they had formulated for the treatment of their patients—they tended to set up personality-oriented goals, rather than just relieve symptoms—and by a more active participation in the lives of their patients, as opposed to merely listening or interpreting. Furthermore, it was found that therapists who were most successful in treating schizophrenics were not necessarily the most successful in treating neurotics or depressives. It is a commonly held view that some psychiatrists are better at treating some patients than others, and it would be very useful to know more about this factor; however, much work remains to be done before we can confidently select a best therapist for a given patient.

We have suggested that some of the differences between T-ratings and G-ratings have to do with the T-raters' interest in outstanding performance. Some evidence in support of this point is provided by two studies in which there was an objective criterion of independence and creativity, respectively, and in which correlations between these characteristics and other personality variables were then calculated. The results indicated that our High T's share some personality traits with the group of more independent and creative people.

In the study of independence of judgment (1), the subjects were college students. "The basic experimental technique employed (was) to place an individual in a relation of radical conflict of judgment with all the other members of a group. The apparent experimental task is to judge which of three lines of variable length meets a standard

line. The subjects announce their judgments one at a time. The naive subject is so placed that he will always be one of the last respondents. On the critical trials, the hired majority give a prearranged false answer. On such trials, to agree with group opinion is to *yield*: to give the correct response is to be *independent*." Differences between "yielders" and "independents" on a self-descriptive adjective check list included the following:

Checked more frequently by Independents	*Checked more frequently by Yielders*
emotional	kind
original	obliging
demanding	considerate
excitable	dignified
reckless	mannerly
mischievous	modest
tactless	tactful.

Yielders seem to resemble our High G's and Low T's, while Independents have more in common with High T's and Low G's.

In Drevdahl and Cattell's study of creativity (2), the subjects were artists and writers who had received professional recognition. The personality test used was Cattell's 16 PF test, "providing relatively reliable estimates of 16 independent and objective personality factors and enabling comparisons to be made with a large 'normal' standardized population." Results indicated that "the personality of the creative person is at once introverted and bold ... of high ego-strength, eccentric and non-conforming ... (disinclined) to public debate and interaction, ... (given to) an acerbity of comment when disagreeing with ... popular thinking." The authors conclude by saying: "The results of this study suggest that the sort of academician that the usual university administrator finds congenial and unobtrusive might not be the kind that would be of most use to the university in regard to its scholarly reputation."

Whether it is appropriate to look for originality and non-conformity in therapists is another question entirely. It is possible that such traits make individuals more interesting, or more likely to write papers and become well-known, without necessarily making him better able to help patients. We wish to emphasize that *almost nothing is known about who gets the best results in psychotherapy* and that this question cannot appropriately be studied without studying the changes in patients. If we study supervisors' opinions, or even styles of performance, we are studying stereotypes of the Good Therapist, the Correct Therapy, and the Ideal Person. These may be interesting and valuable studies, but they must not be confused with studies of effective therapy, or effective therapists.

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PSYCHIATRIC ECOLOGY

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If at the present time an observer were to eavesdrop in several typical psychiatric consultation rooms, he would obtain the strange impression that the science of psychiatry had entered a new stage. He would probably call this period the age of tranquilizers, with a renewed overemphasis on the biochemical and hereditary basis of psychiatric disease. It seems useful not merely to criticize these theoreticians for their "nothing but" causal determinants, but also to ask that more attention be paid to changes within the family and the social structure, since it is clearly these changes that so often lead to the many aches and pains of the modern neurotic patient.

In daily psychiatric practice we are becoming increasingly aware of the various environmental psychologic factors combining to establish the total of the patient's pathologic picture. Especially those therapists who take part in child-guidance, marriage-counseling and working with the aged are very conscious of the growing need for milieu-therapy.

Once I refused to renew a prescription for tranquilizers in the case of a 15-year-old stutterer, brought in after having undergone months of treatment by chemical means, combined with elaborate speech therapy. The first interview brought out the fact that the boy never stuttered at school but only at home, and that a tragic love affair of the mother—conducted under the boy's eyes—was what lay at the root of his speech impediment. His stuttering prevented him, as it were, from betraying it to his father. Yet the mother refused therapy for herself and since then has been going from doctor to doctor in the attempt to prove that not she but her son is the weak and guilty one.

Ecology is the science of interaction and mutual relations between living units and their organic and inorganic environment. It is an old science. Hippocrates wrote his classical ecological study, " On Airs, Waters and Places," emphasizing man's psychological and physical change when in a different environment. In our time Harold Wolff and his co-workers have founded the "Society for the Investigation of Human Ecology" after the shocking experiment with brainwashed soldiers.

Everywhere in nature we find a continual expansion of organisms against an intrusion from outside forces. In health usually a rather stable equilibrium exists between inner expansive and outer coercive forces. However, when this equilibrium suddenly gets disturbed, it may lead to the death of one or more of the species, to enormous usury, or to overpopulation as seen so often in the world of plants and animals.

Our clinical difficulty is how to study the various ecologic changes with verifiable objectivity. Hendricks and West (4) constructed a controlled climate device, the *biotron*, for better study of plant ecology. In our science of psychology equivalent experiments with people would be ethically irresponsible, and accordingly we have to make use of less delineable natural *sociotrons*—the family unit, the classroom, the isolated group, the culture—to observe the various changes. Eaton and Weil (1) have been able to do this for some closely-knit religious sects in their classical study, *Culture and Mental Disorder*. Bowlby and Spitz have also become pioneers of this form of ecological study.

Especially important for practical therapists is the fact that one does not have to

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retreat into a laboratory, there observing the reduced facts of an artificial experiment, in order to get useful scientific answers and insights. Everyday practice with is variation of cultural and social influences can be a fruitful experimental field and laboratory.

The concept of ecologic equilibrium—or social homeostasis—is of great importance to clinical psychiatry. Therapy is in itself an ecologic process, an interaction between two different personalities. Man's mind is in continual anticipation of and exchange with physical threats and coercive persuasions from outside. Man needs a constant sensory verification of reality lest stimuli from within become too powerful and disturb his mind. We are all acquainted with the clinical experiments that show how sensory deprivation or lonely isolation can provoke abnormal thinking and behavior. An equivalent isolation can occur inside the family group.

Homo sapiens is in continual interaction with his fellow beings, with animals, plants, and the inorganic world. Changes in an acquired equilibrium, changes in the biological setting, changes in associates, new encounters, moving to a different community —all these factors may change man's psychosomatic functions. A new adjustment has to be found. During the war there were people who, after arriving in a concentration camp, broke down immediately; there were others—especially compulsive neurotics —who used this opportunity to start an old infantile battle with a dominant parental image all over again, and who actually managed to overcome their compulsive defiance, because this time the enemy was real. Yet, it would be dangerous to make a clinical generalization here. The challenge of hunger and deprivation can, paradoxically, stimulate fantasy or creation, while a stable society often may lead to a paralyzing accumulation of repressed hostility. But the destructive action of famine and terror is usually more traumatizing.

Man's equilibrium between self-assertion and pathological dominance from outside is constantly susceptible to change. Man's vulnerability and tolerance capacity depend on ego strength and personality which in themselves are related to heredity and innate vital forces and strength borrowed or acquired from the family and the community. Here we touch upon the intricate problem of man's morale and his tolerance of danger. For some people homesickness is a challenge, for others it may become the beginning of a psychosis.

Because psychologic problems of migration, cultural pressure and social prejudices are related to these shifts in equilibrium, the psychotherapist needs a basic knowledge of cultural, ethnic and social influences on man. In cases of mental contagion, for instance, and the so-called psychoses á deux, we find not only that a pathologic personality invades his partner's mental equilibrium, but that this phenomenon happens as a rule in an environment so isolated that verification with a wider reality proves nearly impossible.

Another peculiar acute fright and danger reaction I have observed has not been studied sufficiently from an ecologic point of view. I feel it has tremendous implications. I refer to the passive cluster reaction in panic, combined with camouflage, which is often observed in animals. The first time I witnessed this reaction was after an acute panic in a London shelter during World War II. Within a matter of minutes several people died a cataleptic death. The same passive defense is repeatedly found after flash fires in factories and schools. Escape routes from the danger zones are often not used, because of a collective fright paralysis which may have been spread by one contagious hysterical nucleus.

In order to study the subject of psychiatric ecology more accurately, a better understanding of the multitude of persuasions and group interactions to which man is susceptible, is needed. A first condition is that one select his object of study, the *sociotron*,

as carefully as possible and that one has a good knowledge and understanding of communication as well as of mental contagion.

The variety of clinical points I have selected for this paper is chosen to demonstrate the favorable therapeutic impact a change of ecological circumstances can have, and how important it is to look at everyday clinical practice as an involuntary experiment conducted by various ecologic forces.

THE ABSENT FATHER

A boy of 12 came into treatment because of transvestitism. He had difficulties in school because of his girlish behavior, but it was his apparent transvestitism that prompted the mother to bring him in for treatment. He was the son of a working mother, his father having died shortly after the child's birth. From the moment treatment began, the boy dropped his neurotic behavior in a strong transference towards the first man with whom he ever made an intense contact. For her own neurotic reasons the mother had kept the boy quite secluded and out of touch with other people.

Important for the subject under consideration is that in the life of this young patient the therapist fulfilled the role of the lacking father. I followed his progress for many years and he developed quite adequately.

In a sense the father's function within the family is that of cutting the cord. He is the first transference figure; he cuts in on the symbiotic relation of child and mother. When the father is lacking or weak, or the mother relatively too dominant, the infantile identification with the mother remains unresolved. Every adequate father substitute may help to correct the tendency to latent or to more overt homosexuality.

During the past few years I have repeatedly found that in the therapy of school phobia we could obtain success by persuading a passive father to assume a more active role in the family.

INTRUSION BY TECHNOLOGY AND AUTOMATION

Interfamilial relations can be greatly disrupted through the intrusion of a technical-mechanical medium of communication within the home. In families where both parents are glued to the television screen and the children gather in another room to view their own programs, no family communion is established. We find instead a peculiar communicative apathy developing, and because of this the children come to prefer passive watching and listening to the active dialectic struggle with written and printed communication. This I feel is one of the contributing causes of the so-called "reading block" from which one-fourth of New York grade school children seem to suffer, according to a recent report. (Elsewhere I plan to report more extensively on this problem.)

It is important to urge parents to become more active, playful and communicative with their children, and it is especially effective to urge the father to engage with his children in competitive games, especially games that involve a high order of communication, *e.g.* Scrabble or similar letter games. In several cases communicative disruption and reading blocks were corrected by such means.

Besides distorting family relations, the modern mass-media of communication can act injuriously on the sensitive individual mind. For the benefit of children, authorities will have to find means of selecting what to hear, what to see, and what to read without interfering with the democratic freedom of mature people. For the immature mind freedom is an ambiguous pleasure. The freedom for the one to shout simultaneously holds the compulsion for the other to listen. What Wertham calls "the seduction of the innocent" is a reality in our modern world flooded with communicative gadgets, and is not only true for children but also for more adult but equally uncritical minds. This is a subject worth intense ecological and psychological study. The panic created

several years ago by Orson Welles' radio program that depicted an invasion from Mars is still recalled as a vivid experience by many people.

SEPARATION FROM THE AMBIVALENT MOTHER

Once a mother came to me with her baby of three months. She was desperate because the child refused to take food from her but would take it from any one else. Years previously I had treated the mother for a schizophrenic episode, and accordingly knew her hidden hostilities toward her husband and all those who wanted to depend on her. What no one else was aware of her child unconsciously felt, and consequently refused to accept food from the hostile mother, however much she wooed and coaxed the baby. In this case I was able to urge the father to keep mother and child separated for the welfare of both. Schizophrenic withdrawl as a reaction to an ambivalent mother is all too well known. Now, four years later, there exists a working relation between mother and child though the mother does not yet trust her own influence on the child. The child—an apparently healthy youngster—remains with relatives.

I would like to call special attention to this type of case because it is often so difficult to separate the ambivalent symbiotic mother from the child who unobtrusively feels compelled to repeat the attitude toward life that is displayed by the mother. In these families the influence of social worker or therapist can change the ecology, especially when the mother can be influenced successfully to undertake therapy, or, in the case of resistance to therapy, when the child is removed from the pathogenic realm.

THE TERRORIZED COLLABORATOR

During World War II it was my duty to prepare a most difficult military report about a 20-year-old Dutch boy accused of treason and in danger of being condemned to capital punishment. He had escaped from Nazi-occupied territory to the Free Dutch Forces in England. He had given as his motive his fervent patriotism. He had not informed the authorities that he had been a Nazi-admirer before the war and had joined the collaborators after the occupation of of his country. As the facts of his former political associations gradually became better known to the military inquirers, he grew more and more suspect. A nervous breakdown brought him into my hands and gradually gave me the opportunity to distinguish fantasy from facts. The boy had really made his escape from occupied territory not to act as a spy or a traitor but in most part to get away from the increasing pressure of the Nazis with whom he had once sympathized. The son of a weak father, he had playfully taken a liking to the stronger dictatorial figures. But the invasion of his homeland and the cruelties committed by the occupying forces restored him to his former loyalties. However, the Nazis were so well organized that anybody who had once been with them was treated as a traitor once he left the ranks.

Thus the boy was in a dangerously equivocal position; he was in effect a traitor to his fatherland and a traitor to the Nazis as well. Through a perilous escape he tried to get away from his dilemma. But now his initial lies about himself—because he wanted so much to be accepted—brought him again under an even more dangerous suspicion.

I was able to convince the authorities that this boy was a harmless, forlorn youngster. The only way this boy had been able to stop his collaboration with the enemy was to escape to England. Later on he loyally served in the army of liberation.

I present this example especially to show how normal terror can influence, even though temporarily, man's opinions and loyalties and that in order to judge the case objectively understanding of the total social situation is needed.

THE BATTLE AGAINST OLD-AGE ISOLATION

As another example of ecological therapy I want to call attention briefly to what the battle against social isolation can do for the mental health of elderly people. Their isolation usually has normal sociological causes, the marriage of children and the death of spouses and relatives. Secondarily, however, insecurity and suspicion often increase because of organic processes and the reaction formation against growing old. Mourning and true depression is often found in the aged. The psychodynamics leading to senile depression and senile paranoia are too elaborate to be developed here. The inevitable result, however, is increased isolation and decrease of mental functioning. Many of these patients eventually die in squalor and exhaustion in the midst of plenty.

We have found, however, at a project dedicated to this form of sociotherapy, that this kind of situation can be remedied if the therapist or social worker is alert to alarm-signals, and does not give up contact with the patient even when for paranoid reasons the patient attempts to isolate himself. Social work among the aged has proven that many of the problems are much more ecological than neurological. I have repeatedly seen that with tact and a show of genuine interest the process of inner deterioration can be halted. Numbers of our elderly patients were given useful jobs to keep them in contact with reality.

INSTITUTIONS PRO AND CON

An eighteen-year-old girl, only daughter of parents in middle age, was brought to a mental institution after a suicidal attempt. There she was thought to be a kind, compliant and well-adjusted patient. After six months of treatment, and many relapses into depression, she was informed she could go home, and this she did. Soon she again began taking barbiturates and this culminated in another suicidal attempt. When I saw her the girl was out of her coma. I proposed psychotherapy before sending her back to an institution. From that moment there began a year-long struggle with her need to depend on her over-protective parents and her defiance of them. During therapy greater distance from her parents could be achieved only by letting her take a job against the advice of the parents. Therapy in her case was keyed to the underlying principle of giving her the utmost freedom and avoiding the restrictions the parents had imposed. Custody in the mental institution had merely fortified her dependency needs. She both hated and loved her infantile role at the institution and she had become more apathetic during that period.

One thinks of the risk of suicide in such a situation. In my experience a good transference relation is the best protection. This patient improved even more when she could gradually transfer this therapeutic tie to an understanding young man who protected her but also treated her with respect and reserve. Prolonged therapy followed by marriage made her completely independent of her parents' neurotic overprotectiveness.

I mention this example because institutionalization can, as far as the patient is concerned, prolong the automatic attitude of a cold environment and thus coincide with a psychotic reaction.

On the other hand, I have seen cases where institutionalization was indicated for the purpose of restoring ecological relations in the family. As an example, I remember an idiot boy of four absorbing so much guilt and attention from the parents that the two older girls were thrown into a neurotic sibling rivalry which finally could only be well handled by sending the boy to an institution.

SUMMARY

Attention is asked for a renewed study of psychiatric ecology. A change of social circumstances and contacts can often prevent

a pathological development. Such a study does not make intensive psychotherapy superfluous but directs the therapist's attention to disturbing factors in the environment which have equally to be dealt with. The study of the *sociotron* is of tremendous importance for mental hygiene. Examples are given from a wide range of clinical experience to emphasize the need for greater social psychological knowledge in clinical psychiatry.

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PSYCHOLOGICAL STUDIES OF KORSAKOFF'S PSYCHOSIS: IV. THE RATE AND MODE OF FORGETTING NARRATIVE MATERIAL

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Defective retention is the most prominent symptom in Korsakoff's psychosis. This syndrome presents such extreme cases as those described by Gruenthal and Stoerring (8) and Conrad (6), in whom all memory of personal experiences as well as of other information vanished within a minute, though without seriously impairing the availability of long-established habits. As the neurological symptoms and the confusional state of the acute phase clear up the amnesic disturbance shows little improvement. Earlier memories tend to be recalled with fair reliability, but information imparted, events observed, or even experienced with some measure of personal involvement after the onset of the disease are at the most recollected vaguely, inaccurately, and more often completely forgotten.

The extent of the memory disturbance is by no means uniform in all its manifestations. For example, one of the patients studied in the present research, who was never able to report the title or any of the contents of the book she had been reading and was holding at the time of questioning, could describe her daily activities with reasonable accuracy. Another patient who appeared to have no idea of what her daily routine consisted of, was capable of recalling in some detail a conversation she had overheard several hours earlier. A third patient's amnesia typically extended to the name of the experimenter who had seen her some forty times and had told her his name on as many occasions, yet she invariably recognized him as someone she had met before, sometimes in the "hospital" but more often, and with remarkable consistency over the years, as having seen him "calling at the Flanagans," one-time neighbors of hers whom he had never visited. Yet another of these patients both recognized the experimenter by name and correctly placed him in his setting, but in other respects displayed very severe amnesic defects, for she was unable to relearn eight lines of a nursery rhyme she remembered having known as a child, and could not retain the gist of a simple story after a few minutes. Neither could these patients be relied on to perform consistently in a specific memory test on repeated occasions; some of them showed a tendency to improve, while most of them fluctuated.

These apparent inconsistencies cannot be accounted for in the absence of an adequate theory of remembering, but may indeed contribute to the formulation of one. Clearly, the damage is not simply a general diminution of some capacity, whether it be registration, retention, or recall, neither does it result from an abnormally severe susceptibility to interference as demonstrated by an experiment (11) in the reproduction and recognition of both meaningful words and nonsense syllables; nor can it be attributed to motivated repression. The argument for the latter explanation could hardly be sustained in the face of the very extensive amnesic defect characteristic of Korsakoff patients, and of their tendency to forget emotionally neutral impressions as fully as they do painful, disturbing or perplexing experiences. Betlheim and Hartmann's experimental study (4) with three Korsakoff patients would support the relevance of the motivational factor to their memory disturbance but, as will be reported below,

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their findings could not be reproduced in our study. Moreover, these authors themselves considered repression to be but one of the several circumstances which constitute the total amnesic condition in Korsakoff's psychosis.

An adequate assessment of the memory disturbance in Korsakoff's psychosis presupposes a survey of performances both in the course of clinical interviews and in the experimental laboratory, varying the content as well as the conditions and operations of recall. The present report is limited to one segment of this study, for it deals only with recall of meaningful narrative material presented in the form of several short stories to be memorized. Recall was tested after intervals of varying length, by means of both reproduction and recognition. Two specific hypotheses tested concerned the tendency towards symbolic distortion observed by Betlheim and Hartmann, and the interference effect of redundant or insignificant information. Tests of recall also raised the question of confabulation, which will be considered without attempting a systematic analysis of the phenomenon in this paper.

METHOD

SUBJECTS

The experimental group consisted of 22 patients of the Boston State Hospital, diagnosed by neurologists as having Korsakoff's psychosis, who at the time of their first testing had been at that hospital for periods ranging from one year to over twelve years. They all had a history of alcoholism prior to their hospitalization, and had been under observation for the neurological symptoms of Wernicke's encephalopathy in the acute phase of their disease. Their cultural background was predominantly that of the lower class of Irish extraction; their I.Q. was in the average range as tested by the Wechsler Bellevue Intelligence Scale (12), with a mean of 98.5 (SD = 12.2); in age they ranged from 31 to 74 at the time of their first testing, with a mean of 53.4 (SD = 9.8). In most of the studies here reported the Korsakoff patients served as their own controls. For two of the tests, however, control groups were used. One consisted of 14 alcoholic patients who were receiving psychotherapy in an out-patient clinic and of eight hospitalized neurological patients who were receiving physiotherapy. The second control group was composed of ten psychiatric in-patients and six neurological out-patients. Both control groups were matched for age with the Korsakoff group.

MATERIAL

Five narrative passages were used in the tests. These included Franz's (7) *cowboy story* which has been extensively employed in psychological studies of neurological diseases:

> A *cowboy*/[1] from *Arizona*/[2] went to *San Francisco*/[3] with his *dog*,/[4] which he *left*/[5] at a *friend's*/[6] while he *purchased*/[7] a *new* suit of *clothes*./[8] Dressed finely,/[9] he *went back*/[10] to the dog,/[11] *whistled* to him,/[12] *called him* by name/[13] and *patted* him./[14] But the dog would *have nothing to do* with him,/[15] in his new *hat*/[16] and *coat*,/[17] but gave a *mournful*/[18] *howl*./[19] *Coaxing* was of no effect/[20]; so the cowboy *went away*/[21] donned his *old garments*,/[22] whereon the *dog*/[23] *immediately*/[24] showed his wild *joy*/[25] on *seeing his master*/[26] as he thought he *ought to be*./[27]

The tendency towards symbolic distortion was tested by one of Betlheim and Hartmann's own short stories (B) and a control text (C) matched for length and information but free from disturbing sexual content:

> (B) "When the mother left the house,/

the father locked himself up in a room/ with his daughter,/ threw her on the bed,/ and raped his own child."

(C) "When the mother left the house,/ the daughter stole into the pantry,/ took down a box of cookies from the shelf,/ and ate the lot,/ so that none was left."

Lastly, the interference effect of redundant information was tested by two versions of two passages from a morning paper, the longer ones somewhat embellished, the shorter couched in a terser style than the reporter's.

(D/long) Mailmen/ are frequently asked questions that have little to do with postal matters./ Paul Callahan/ was covering his route/ in the Inman-St. section/ of Cambridge,/ and was stopped by a woman/ in her twenties,/ wearing a brown dress,/ who had a worried expression on her face/ when she asked him: "Can you tell me where I could borrow some money/ without having to ask my husband to sign a paper?"/ "I don't know offhand" the mailman replied,/ "but I would not advise it,/ for he will find out about the loan/ when the payments are due."

(D/short) When a woman/ asked a mailman/ in the street/ where she could borrow money/ without her husband's knowledge,/ he replied he didn't know/ and would not advise it/ because the husband would find out/ when the payments are due.

(E/long) In a city/ in India/ several thousand school children/ paraded/ in the main square/ to celebrate the sixty eighth birthday/ of the prime minister./ While reviewing the parade/ the prime minister released/ a number of doves,/the symbols of peace,/ from the cages in which they had been kept./ The white doves flew over the heads/ of the young marchers./ One of them, however, perched atop the prime minister's head/ while he took the salute.

(E/short) The prime minister/ of India/ released white peace doves/ over the heads of several thousand school children/ who were parading/ to celebrate/ his sixty eighth birthday,/ but one dove perched on his head/ while he took the salute.

The strokes indicate the units into which the stories were divided for quantitative analysis of recall. The division of the *cowboy story* follows the original design which broke it down into 27 sections for verbatim reproduction. When the instruction was for recall of content, only certain significant words or phrases within each of these sections were scored, those in italics above. Suitable synonyms or substitutes were accepted, *e.g.*, "bought" (but not "got") for "purchased," "did not recognize him" or "did not know him" for "would have nothing to do with him," "put on his old clothes" for "donned his old garments," "happy" or "pleased" instead of "showed his wild joy," "seeing him" for "seeing his master." Items 10 and 11, 16 and 17, 18 and 19 were paired into single units, so that *e.g.*, "mournful howl" counted as one point only. A second reference to the new clothes, in place of "dressed finely" did not add to the score, neither did a repeated mention of the old clothes or of a cowboy outfit in place of the last section.

The same principle applied to the scoring of the other stories; the content of each unit counted, no matter how loosely phrased or how far out of its original position in the sequence of sections, as long as its referent was unmistakably correct. A "lady" or merely "she" was accepted instead of a "woman" in the *mailman story*, "flew down on", "sat on" or "lit upon" in place of "perched atop" in the report from India, "crackers" or "candies" for "cookies" in *story C*. The single sentence stories (*B* and *C*) each divided into five sections, the shorter versions of *D* and *E* into nine, the longer into 16 units.

Recall of the *cowboy story* was also tested by means of recognition, presenting the ten questions listed below with a set choice of four answers to each.

1. Whom is the story about?	Farmer Cowboy Carpenter Sailor
2. Where was he from?	Chicago Mexico Arizona Florida
3. What did he take with him?	His daughter His car His guitar His dog
4. Where did he go to?	San Francisco New York Canada California
5. What did he do with the dog?	Kept him with him all the time
	Asked his wife to look after him
	Left him with a friend
	Locked him up in the kennel
6. What did he go out to do?	Take a girl to a dance
	Buy some clothes
	Buy a new radio
	See a movie
7. What happened on his return?	Had he forgotten about the dog?
	Did he pick up the dog?
	Did he call the dog by name?
	Had the dog disappeared?
8. What did the dog do?	Did he jump on him?
	Did he howl mournfully?
	Did he snap at him?
	Did he growl at him?
9. Why did the dog not recognize his master?	Because of the strange place
	Because he wore new clothes
	Because he was a very old dog
	Because he was very hungry
10. What did his master do to be recognized by the dog?	Coax the dog
	Give him a bone to chew
	Put on his old garments
	Stroke the dog's neck

PROCEDURE

All the stories were presented with an instruction to memorize them. In every instance but one the experimenter read the stories aloud in a clear loud voice and at an even rate. The reason for choosing this procedure was that the task of reading, particularly of texts longer than a single sentence, creates additional difficulties for Korsakoff patients who, as other studies (10) have shown, were likely to react as if faced with two separate tasks simultaneously, the one to read and the other to remember, and their performance in the latter would have suffered as a consequence. *Stories B* and *C*, however, since they each consisted of one sentence only, were presented to the subjects to be read aloud by them, the experimenter helping or correcting them if necessary.

The *cowboy story* was read to the Korsakoff patients on three occasions. At first they were instructed to try and remember it word by word, and were tested for verbatim reproduction immediately after the experimenter completed his presentation of the material. All 22 Korsakoff patients and the first control group of 22 participated in this test. After the lapse of some 18 to 20 months a second test of reproduction was

given to 20 members of the Korsakoff group. Their instruction was to reproduce the content of the story immediately after its presentation, and the experimenter helped with a few prompting questions. This procedure was followed immediately by a test of recognition presenting the ten forced choice questions. After 24 hours, and again a week following the reading of the text, recall was tested first by means of unaided reproduction and subsequently by recognition. Only 10 of the original 20 subjects were available for the two repeat tests. Last, after a further interval of ten months, the story was read once again to 16 members of the Korsakoff group. Recall was tested by unaided reproduction, first immediately following the presentation of the material, and subsequently after one hour, two hours, and three hours. Finally, after the fourth test of reproduction, the forced choice questionnaire was presented for further tests of recognition. The first hour was occupied by a standard procedure of psychological experiments, most of the second hour by EEG recordings, and the third hour was a rest period. Our second control group of 16 was tested for recall by reproduction both after the short and longer delays, *i.e.* after intervals of one, two, and three hours, 12 of its members also a day later, and ten after a week's interval. The control subjects were occupied with psychological experiments during the first two hours. It will be noted that, owing to the somewhat different experimental conditions of the two groups, the control data for delayed recall are not completely comparable with those of the Korsakoff patients. In no instance were the subjects warned that further tests of recall would follow, whether an hour, a day, or a week later.

Stories B and *C* were given to 14 Korsakoff patients only, each on a separate day. Test of recall was by reproduction of content five, 15 and 45 minutes after reading the story. *Stories D* and *E* were presented so that the longer version of one and the shorter version of the other were read on one occasion, the alternate versions several weeks later. The sequence of long and short version of the same story and of the long and short story within one session alternated among the subjects. Test of recall was by reproduction of the content a few seconds following the reading of each story. Seventeen Korsakoff patients formed the experimental group in this study. No control group was studied under the same conditions, but a parallel experiment was conducted with 21 staff members of the Department of Psychiatry of the Massachusetts General Hospital, who reproduced the stories serially, *i.e.* one subject having read the stories, wrote down a day later what he remembered of them, read this to a second subject, who in turn reported his recollection of the stories to a third person after a day's delay, and the last member of the chain also waited for a day before writing down his report. The purpose of this experiment was to investigate the qualitative changes in recall which arise from the cumulative effects of omission and distortion characteristic of this procedure.

QUANTIFIED RESULTS

Under conditions of immediate verbatim recall the Korsakoff group reproduced a mean of 3.97 of the 27 units of the *cowboy story*, as compared with the control group's 8.32. With $t = 5.51$ the difference is significant at the .01 level. Both groups tended to reproduce the first few items of the story more accurately, no doubt because these hardly lend themselves to changed phrasing. The controls also scored fairly highly on the last sentence, as would be expected in accordance with experiments in rote learning; the Korsakoff patients, in contrast, reproduced none of the last five items. Table 1 illustrates this difference, listing mean scores of the experimental and control groups for verbatim recall of the 27 units of the story, and for immediate reproduction of the 24 units in the memory test for content.

With the number of units reduced from 27

TABLE 1

Units of Cowboy Story Reproduced on Immediate Testing

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Verbatim recall																											
Korsakoff (N = 22)	9	11	9	18	2	1	9	8	0	2	2	2	1	1	2	2	3	0	1	0	3	1	0	0	0	0	0
Control (N = 22)	18	14	12	18	10	11	14	15	1	8	5	4	2	3	7	2	2	1	5	2	2	11	1	0	4	6	5
Reconstruction of content																											
Korsakoff (N = 16)	9	9	4	16	5	1	5	10	0	5		1	0	0	10	2		2		0	4	4	3	0	3	0	0
Control (N = 16)	15	11	11	16	3	3	11	15	0	6		1	1	2	15	3		5		0	6	12	8	0	7	1	1

to 24, the Korsakoff group's immediate recall score for content, giving a mean of 5.82, was significantly higher than their score for verbatim reconstruction ($t = 2.51, p < .02$). For the controls the increment under these conditions was much smaller and statistically not significant; their mean score for reproducing content, 9.56, however, was significantly higher than the Korsakoff group's ($t = 5.22$). Prompting questions helped to increase the Korsakoff group's immediate recall score to 9.30, a mean significantly higher ($t = 5.37$) than for reproduction of content without such helpful questions as "Where did he come from?", "What did he do?", "Then what happened?"

Figure 1 shows a composite forgetting curve for the Korsakoff patients as tested by reproduction, the first section representing the progressive decrement in their recall of content in the third testing session. Their reproduction score dropped from 5.82 to 3.62 in the first hour, to 2.44 after the second hour, and to 1.81 after the third, the decrement being significant in the first two instances ($t = 5.20, p < .01$, and $t = 2.84, p < .02$), but not in the third. The other part of the Korsakoff group's curve is based on the second testing session, when the patients were tested immediately after hearing the story, and then after the lapse of a day, and again six days later. The group means in the two sections of the curve are not quite comparable, since only ten of the 16 subjects tested at hourly intervals had been available for the more delayed tests of recall. After three hours, the mean reproduction score of this sub-group was 2.40—as compared with 1.81 for the entire sample—two scoring zero, while after a full day five of the ten patients remembered nothing of the story. At the end of the week only three of the ten subjects remembered anything about the story, two reproducing one, and the third three sections of its content. The control group forgot at a much steadier rate, dropping from 9.12 on immediate reproduction to 8.12 after the first hour, and to 8.00 after the second, and retaining this mean after the third. After 24 hours their mean score rose to 9.75, and still reached 8.75 after a week. The paradoxical gain shown by the control group after a day as compared with immediate testing is an example of reminiscence (2), an occurrence which accounted in part for their slow rate of forgetting in the first two hours. With 16 Korsakoff patients there were only four instances of reminiscence, *i.e.* the re-emergence of information missing from an earlier

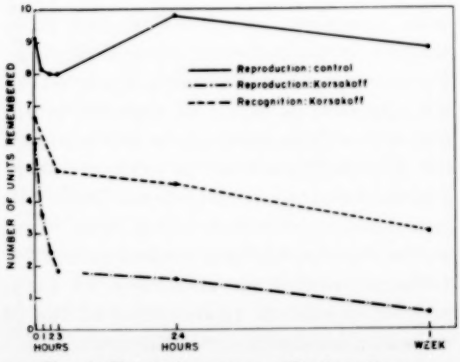

FIG. 1. Forgetting curves: Cowboy Story

test of recall; in the control group of the same size this phenomenon occurred on 25 occasions.

The recognition test confirmed the finding based on the reproduction scores, that in the Korsakoff syndrome the rate of forgetting is rapid in the first few hours, and then tapers off. These results also illustrated the argument that the patients' retention defect does not fully account for their amnesic symptoms. Their score on immediate testing was fairly high, with a mean of 6.60 correct answers, but then it fell to 4.88 in the first three hours, and only a little further to 4.60 at the end of a day. After a week, however, it was down to 3.10 which is not much better than the chance level of 2.50. The losses over the first period of 24 hours ($t = 3.04$), and over the second period of six days ($t = 3.00$) are statistically significant.

The length of *stories B* and *C* clearly exceeded the measure within which Korsakoff patients can accurately reproduce a sentence, and the limit of which is certainly lowered if they are required to read it themselves (10). One subject reported all five sections of *B*, another those of *C* on first testing. The mean score for immediate reproduction was alike 2.71 for both *stories B* and *C*, and both were forgotten at about the same rate, the recall score dropping on subsequent testing to 2.00, 1.57, and 1.00 for the one, to 1.86, 1.43, and 1.07 for the other. Prompting in many instances helped to recover some detail omitted in the spontaneous report, more particularly in delayed recall, *e.g.* "When did it happen?": "When the mother left the house;" "Who did it?": "The father" in place of "he," "the daughter" instead of "she." Only two instances of reminiscence occurred, one after five, the other after 15 minutes. After five minutes every subject remembered the gist of both stories; one completely forgot *story B* after 15, and four others after 45 minutes, yet another subject could recall nothing of *story C* after 15 minutes, and a seventh after 45 minutes. Mean differences of individual recall scores were significant ($p < .01$) between immediate and delayed testing after five minutes, and also between retesting after five and 15 minutes.

Stories D and *E* were both presented in a long and a short version, the former including seven additional items of information of minor importance for the incident reported. Mean units recalled were 4.1 alike for the two versions of *story E* and 5.2 for the longer, 4.8 for the shorter variant of *story D*. The seven additional items of the longer version accounted for a score of only one in the total group record of 17 Korsakoff patients in *story E*, and for seven in *story D*. Unimportant details were evidently neither remembered, nor did they noticeably interfere with the recall of the central theme.

In view of the numerous reproductions of all the stories given in the briefest and barest phrasing, it is at least arguable that details of a story serve as cues for recalling other details, as Cameron (5) suggested in his distinction of two types of memory defect in amnesic patients. The omission, or only very scanty sketching of the setting in which the events reported took place, corresponds to the perceptual limitations observed by several students of the Korsakoff syndrome, while the distortions and elaborations of the core content recalled are suggestive of the verbal behavior often referred to as confabulation.

DISCUSSION AND ANALYSIS OF CONTENT

The foregoing quantitative analysis of recall performance has shown that, when faced with the task of memorizing some comparatively simple and short narrative material, Korsakoff patients are impaired in the amount of information they can take in at first, and then forget at a faster rate than control subjects. They retain very little, and many of them retain nothing after a period during which controls show virtually no memory loss. They tend to recall information given at the beginning of the story more accurately than details or phrases which occur

at the end. Data which bear little relevance to the central theme do not seem seriously to interfere with the amount or the clarity of the essential information registered and reproduced on immediate testing; in the absence of reminiscence effects, they are therefore unlikely to increase the rate of forgetting. The recall scores for the single sentence stories (*B* and *C*) also suggest that within 15 or at most 45 minutes even a unitary narrative text presented in the starkest phrasing attenuates into a skeleton statement, such as "he raped her" or "she ate the cookies."

Although tests of recognition indicated a higher level of retention at every phase, the rate of forgetting was rapid in the first three hours. This method of testing recall, as with prompting questions, points out that the spontaneous process of reproduction imposes an additional burden on the Korsakoff patients. So does, of course, the requirement of verbatim recall, and to a greater extent than for the controls. Completely accurate reproduction, as demonstrated by Bartlett (3), is the exception, the limiting instance of recall, so it is somewhat surprising that the control group which worked under instructions to repeat the story verbatim performed about as efficiently as the group instructed to reproduce the content of the story. As remarked above, certain items of the *cowboy story* could either be remembered verbatim or not at all, and this is one reason for the negligible difference in performance between the two control groups; the immediate test of recall is another. Such words or phrases as "donned," "coaxed," "howled," "showed his wild joy" occurred repeatedly in the records of the control group, but hardly at all in the many more protocols of the Korsakoff patients, and the last of these, like the two final units of the story, not once.

The omissions, distortions, embellishments, and elaborations introduced by the Korsakoff patients into their reproductions of the stories, and any progressive trend in these are of interest in view of the general attribution of the symptom of confabulation to this syndrome. Apart from the various modes of impoverishment of the content, the changes which occurred in reproduction divide into five general types.

The first of these implies no error, merely a loosening or *levelling* of some item of information. The most frequent example in the *cowboy story* occurred at the beginning, when the central figure would be reported to have gone "to town," to "California," or "out west." This type of alteration of the content was quite common with the controls as well as with the Korsakoff patients, though only the latter referred to him simply as "a man." Another instance of levelling provided by this group was "the dog didn't like him" for "would have nothing to do with him."

A second type of content change involved some *error*. The control and Korsakoff subjects between them listed a fair sample of the south-western states in lieu of Arizona (correct), and the opening words of a control subject, "A sailor from Wisconsin . . ." was nicely matched by a patient who began his story with, "A sailor from Illinois . . .".

The third type of change consisted of some *elaboration* of an incident, some gratuitous embellishment of the original text. Examples from the records of the control group are "A cowboy left his ranch . . .", ". . . the dog barked at him when he came out of the store," ". . . the dog ran to him and licked him," ". . . the dog yelped at him;" from those of the Korsakoff group "Nobody knew him he was so dressed up, even his neighbors did not recognize him," ". . . the man was very poorly dressed, so he bought . . .", "purchased new clothes, and then bought some food." Several members of both groups seemingly had formed the impression that the central character had gone to San Francisco in his cowboy's outfit and there replaced it with civilian

clothes, a plausible enough conclusion though not warranted by the text of the story.

The fourth type of change did not affect the content, but was merely a *comment* on the part of the narrator. The most typical instance of this modification was induced, quite reasonably, by a glaring improbability of the text. Dogs are not at all likely to rely on a visual recognition of their master, and this evidently perplexed several members of both groups, so that they either made some comment to this effect and thus questioned the verisimilitude of the story, or tried to explain this apparent contradiction by suggesting that the new clothes had not yet absorbed the master's scent. One member of each group made an attempt with this rather feeble argument.

Lastly, there were instances of *fabrication*, of inserting a complete unit from a different context into the story, or of substituting an entirely different narrative for it. In this type of change the two groups differed quite markedly, and the examples given by the Korsakoff patients are of considerable interest in the context of their syndrome. The only instance provided by a control subject which might fit into this category (though it might more properly be termed an *elaboration*) is: "If the dog did not recognize him he would not take him back with him to Arizona." One example drawn from the Korsakoff records, in turn, is perhaps merely a case of a jesting *comment*: "The gentleman went to town to get himself some things and came back with a new suit he had not intended to buy. At least he got himself a nice birthday present." This was all the patient recalled after three hours, though an hour earlier she still remembered the theme of the story and reported it with a score of 4. A clear case of fabrication was the following: "A man from Texas went on a mission to visit some boy schools. He took his dog with him, bought some new clothes, and then continued on his mission." Another example was produced by a patient who after the first hour reproduced the barest skeleton of the story; an hour later introduced a "fence" into her report, and after yet another hour, forgetting the cowboy theme altogether, produced this: "When the dog went near the fence someone tapped him on the shoulder—had to prevent him from going near the fence. He was afraid he might get hurt." The same concern emerged earlier in the testing session when this patient was shown a picture of some children walking out from Sunday school and a line of cars at the edge of the road, a father waiting in each. The picture depicts no fence, nor is there any likelihood of a child rushing thoughtlessly into the road, for the close array of stationary cars forms a solid barrier. Yet, when asked to describe this scene, the same patient also introduced a non-existent fence which had to be there to guard the children from the dangers of the road traffic. As far as could be ascertained, the patient had no personal experience which would account for this theme; her own children were certainly beyond school age at the time she was first hospitalized.

The most remarkable case of *fabrication* was the following story recited on immediate testing: "A farmer went to the market with cows to sell, and to buy some finery for his wife. He sold the cows, shopped for the wife, built a new barn, bought cows. I forget the rest." The following day the same patient recalled what she had heard 24 hours earlier in these words: "Farmer story—went to market, did a lot of shopping, bought cows and some finery for his wife. Bought some paint for his barn which he was going to paint, to get ready for the spring." This much is not particularly striking; the patient presumably confused the story she was given to remember with some other story, and slightly elaborated the latter in the intervening 24 hours. Ten months later the original story was read to her

again, and on immediate testing she reproduced it with considerable embellishment, much omission and a few errors. The story, however, was recognizably about a cowboy and his dog. After an hour it became a story about a farmer who went to the market and left his dog behind, and this was thus further elaborated by the time two hours had elapsed: "Farmer went to the market. Left his dog at home. Did not know he would be so long, he stayed in the market till the sun went down. When he went home the dog ran up to him barking, showing he was happy." Admittedly, this time a core of the original story carried through the reproductions, in a much distorted form, but again it set off the theme of the farmer going to the market. This was not a unique occurrence, for the same patient misperceived a tachistoscopically presented figure in the same way on two occasions over a year apart. Another patient twice distorted the *cowboy story* in much the same manner on immediate testing, though ten months had passed by between the two occasions. Her reproductions were these: a) "About a man and a dog; he took the dog for a walk, the dog ran off. The man kept calling, the dog would run off, and so the man would have to keep on calling;" b) "Fellow went out with the dogs, called them and whistled to them, but they would not come back, because he was dressed in different clothes. Dogs go by scent." In this instance again the second attempt retained more of the original text, but the same extraneous content crept into it as on the first occasion. These full quotations exemplify the most thoroughgoing distortions of the original story, and they also provide as good an instance of progressive embellishment as any of our records. Their main interest, however, is not so much in the extent to which they altered the original story, but in suggesting that a standard input of information can undergo much the same distortion in coding on repeated occasions, without the intervention of any other ascertainable agency than the patient's brain damage.

Betlheim and Hartmann, of course, have a psychological explanation for this phenomenon, though their own reference system would hardly regard a farmer as a stable symbol for a cowboy, a market for a clothing store, or a happy dog for a surly one. Nonetheless, it is quite possible that the same mechanism which produces instances of symbolic reproduction also mediates these other distortions which recur with such striking uniformity over long gaps of time.

Our Korsakoff patients furnished little or no evidence in support of Betlheim and Hartmann's thesis. They recalled test *story B* as accurately as the control text *C*, and on immediate testing each patient reproduced the word "raped" and mentioned "father" and "daughter" as the parties involved. This was also true of the reproductions after five minutes, although one patient phrased it this way: "The father entered the room where his daughter lay, and attacked her." However, when the experimenter remarked that attack was not quite the right word, the patient reproduced the original phrasing.

There were very few instances of *elaboration* or *distortion* in the reproductions of either *stories B* or *C*. One patient referred to a "little girl" in her first reproduction of *story B*, though not in the later attempts; another reported after 15 minutes that "some gentleman seduced his secretary—his daughter," and reverted to "man raped his daughter" on the last test. The only instances suggestive of symbolization were these: "When the mother left the home, the father threw his daughter on the bed, and she had a child by him," and "When the mother left home, father climbed the stairs and raped his own child." The former, however, is probably more a case of deliberate euphemism, and the latter hardly qualifies as symbolization since the act which is sup-

posed to be symbolized was named in full. The *rape story* visibly upset two or three women patients and seemed to embarrass a few others, but not to such an extent as to prevent their repeating it. Several of them, however, appended some censorious or exculpatory comment to their report, *e.g.* "ought to be shot" or "took advantage of her, did not know better." One comment of this kind also followed a report of the control story, a patient remarking on the girl's taking the cookies, "that was larceny."

Stories D and *E*, although they were tested only for immediate recall, produced many distortions of the five types listed above. Examples of *levelling* were the substitution of a mere "man" or "stranger" for the mailman, or the suggestion that borrowing money without the husband's knowledge "wouldn't do," "could not be done"; "populace" for the parading children, "leader" for the prime minister; "doves turned up" or "A group went to India to see the prime minister. They had birds there" for the carefully staged peace ceremony. *Story E* gave one patient the opportunity to demonstrate the process of *sharpening*, by correctly calling the prime minister Nehru.

Crude *errors* of fact were few in the *mailman story*, *e.g.* placing the event in Inman Square or Central Square, but more frequent in the reproduction of the *Nehru story*, particularly as a result of confusing or condensing incidents, such as references to him as a "maharajah" or "the minister responsible for children," to the occasion as "a man and wife celebrating his 68th birthday" or as a "parade to celebrate peace," mentioning "5000 children" by number, transferring the symbolic gesture to "the spectators who released doves." There were several errors of reasoning of the *non sequitur* type, more particularly in the explanation given the woman why she should not borrow without letting her husband know, *e.g.* "because he would see the mail and know she had borrowed it," or the mailman "didn't know because the husband would find out." This section of *story D* also allowed for all kinds of *elaboration* and for *comments*, mostly spoken through the mailman's mouth, *e.g.* "it would get her into trouble," "husband would be awfully mad," "why not go to husband?" "bad policy," "people who borrow without permission easily get into trouble." In some instances the mailman's answer was radically misinterpreted, as in the case of the patient who believed that "the mailman thought it was a good idea," or of another who recalled his suggesting "she should go and ask someone else." One patient thought the woman asked the mailman to tell her where her husband could borrow some money. This was the most serious distortion of the original text, for *story D* did not give rise to any *fabrication*.

In reproducing *story E*, *elaborations* occurred most commonly in the description of the prime minister's part in the ceremony which, according to the original text, consisted of reviewing the parade, releasing some doves, and taking the salute. Several patients thought that he was delivering a speech, one of them making the specious though somewhat trivial remark that "he addressed them in his native tongue," another believed he told the children that "the doves were the symbols of peace"; one patient thought the "prime minister was preaching," and another that he "gave prayers over the children." The doves were reported to have "circled around" or to "have gone out to spread peace." The one *comment* on the story concerned the dove's felicitous choice of a landing stage: "... it lit on his head—to show appreciation, I should imagine" and again by the same patient several weeks later "... in appreciation, I suppose." There were some examples of *elaboration* which, perhaps, amount to *fabrication*. This class may include a couple of suggestions about the children's response to the final incident of the story: "... and the

children watched the dove on the prime minister's head until it flew away;" "The assembly, especially the children, cheered. The prime minister thought they were cheering him, they were actually cheering the dove." Confusion which almost amounts to *fabrication* was exemplified by this report: Maharajah of India came on a visit and brought some doves with him, one of which landed on the prime minister's head, thereby endowing peace on the world." Lastly, a clear case of *fabrication,* though still retaining some elements of the story: "Prime minister had 68 doves to celebrate his birthday. When he went to count the doves, one was missing, as it was perched on his head."

Before labeling these instances of distortion as examples of the processes customarily described as confabulation, it may be of interest to look at the content of the serial reproductions of intelligent and neurologically sound subjects, made under the conditions of ambiguity and delay characteristic of the experimental procedure employed. Since distortions and elaborations tend to be cumulative, only examples from the final, *i.e.* third, report in each chain will be listed. In the *mailman story* they mentioned a "William Connolly", a woman who is "excited" and asks the postman to "help her steal some money," the woman's "husband being sick," a "young girl, married who lived in Inman St.," or a "young blond 'dish' who walked up to a postman." They also included such remarks as, "she somehow thought the postman could arrange it for her" or a final *comment:* "The woman told him that he was right, she hadn't thought of that," and this example of distortion: "A very anxious woman walked along a street in North Cambridge. She finally spotted a policeman by the name of Callahan. She proceeded to tell him her troubles and then felt much better." The *Nehru story* produced such exact data as "2000 pigeons," "64 white doves," and as many as "30,000 school children who were excused from classes to attend." The central figure is "a maharajah" as it was for one of the Korsakoff patients, or "the prime minister of Islam," the occasion a "large party for children," or a celebration which it is "customary for the prime minister of India to give"; the people honor Nehru . . . with fireworks," who "makes a speech and is disturbed" by the final episode. One version retains no more of the original than this: "A great crowd gathered in India. They all began to cheer. A flock of birds swooped down and then up again. This was a sign of good luck." In one instance there is the typical *comment* "must have looked amusing," in another an exact parallel of the Korsakoff group's most characteristic example of *fabrication*: "In honor of this occasion he released a flock of doves, 44 in number; 43 turned up, the 44th he couldn't find, for it was perched on his head." The Korsakoff patients, on the other hand, produced nothing to match this ending of the story: "During the course of the celebration one or more doves were released, and one of them laid an egg which hit Nehru on the head."

These examples of distortion in serial reproduction have been listed in detail because they directly bear on the question of confabulation. Should we call them, or some of them, instances of confabulation, and if we do is it right to regard confabulation as a primary symptom of a disease, or is it merely a manifestation of a state of confusion, indirection, ambiguity? If we accept the latter definition, the fact that Korsakoff patients typically confabulate in talking about themselves rather than in reporting extraneous events has no particular significance, for when they do so they are clearly also confused about their whereabouts and about the temporal sequence of preceding events. Their personal experiences have become as disjointed, as bereft of stable cues as the impersonal story which has passed from one healthy person to another after he had reconstructed it as well as he could from memory. By referring to this state

as one of indirection, and presenting it as the situation in which confabulation arises, the problem of this symptom has obviously not been given adequate examination. A detailed analysis of it cannot be attempted in the context of the present report, but will be given in another paper in the light of clinical as well as experimental observations of the Korsakoff patients reported on in this study. Here we only wish to point out that the processes of omission and levelling, of substituting erroneous data, and of elaborating the content so as to make it more plausible, more dramatic, or a more rounded tale, of rationalizing and commenting, of introducing extraneous incidents, are all familiar phenomena in the verbal and pictorial reproduction of normal persons (1, 3, 9). The characteristic difference of certain classes of neurological patients is that conditions conducive to these processes occur more commonly, under objectively less severe strain, and over shorter time intervals.

SUMMARY

The memory of Korsakoff patients for narrative material was studied by asking them to recall several brief texts after intervals ranging from a few seconds to one week. Short and longer term forgetting curves were thus determined for performance by reproduction and recognition.

These patients miss and distort much of even short and unitary stories at the phase of first hearing or reading, and forget more and at a steeper rate than control subjects. Since their recall is less faulty under conditions of recognition and in reply to prompting questions than in unaided reproduction, it is likely that one of the processes damaged by the disease is that of establishing connections between self-contained units of information, and consequently of isolating groups of interdependent units within the universe of impressions.

As in most instances of faulty remembering, loss of information, by omission and levelling of content, is not the only defect which characterizes the Korsakoff patients' recall of narrative material. They also substitute erroneous data, and tend to introduce extraneous material, explanatory remarks and evaluative comments into the narrative context. While most of these errors appear to be unsystematic, in a few instances the same or similar incorrect narrative or phrase was reported in place of the original text after an interval of several weeks or months, thus suggesting a defect in the original coding rather than in retention.

The study failed to support the case for motivated forgetting with instances of symbolization as conceived in psychoanalytic theory. Neither did it furnish evidence for the hypothesis that in the amnesic syndrome irrelevant or inessential information interferes with the retention of significant information.

The problem of confabulation was considered in the light of elaborations and distortions in the Korsakoff patients' reproduction of the narrative material. Since, under experimentally created conditions of ambiguity and delay, normal subjects tended to distort and elaborate the stories in much the same manner, is was suggested that confabulation may more properly be regarded as an effect of the Korsakoff patient's state of indirection than as a primary symptom of his disease.

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MERCER, J. D. *They Walk in Shadow.* Comet Press, New York, 1959. 573 pp. $5.95.

This is a very sincere but spotty and inconsistent book pseudonymously written and published at his own expense by a self-confessed and actively practicing ambisexual. It is a large book, liberally sprinkled with quotations from authoritative (and frequently outdated) sources; and it gives much salient information on homosexuality that has never before been collected under one cover.

Mr. Mercer, who is not a professional in any sense of the word, has done considerable research in preparation for writing *They Walk in Shadow* and has added significant portions to it since he prepared the first version of the manuscript ten years before its final publication. As a result of his efforts, the book is sober, reasonably objective, and at times quite persuasive. Even when the author's defensiveness is clearly showing, and when he becomes over-polemical and sarcastic about writers (largely psychoanalysts and psychiatrists) from whom he significantly differs, his arguments are cogently presented and command some measure of respect. Unlike Donald Webster Cory, who in *The Homosexual in America* essayed a frankly subjective approach to homosexuality, Mercer relies only moderately on his first-hand experience and largely quotes scientific writings and clinical impressions of others.

Unfortunately, for all the work that has gone into this volume, it leaves much to be desired in its survey of the causes and characteristics of homosexualism. Being, like most of the writers for the two contemporary pro-homophilic magazines, *One* and the *Mattachine Review*, most seriously intent on counteracting present-day persecution of sex deviants, Mercer leans over backwards to try to show that fixed homosexuals are strongly influenced by congenital factors, are not too neurotic or psychotic, and are almost completely incurable. In this respect, he takes almost the identical line of Magnus Hirschfeld, also a practicing homosexual, who in his great humanitarian efforts to protect the homosexuals of his day from legal persecution, wishfully and unobjectively thought up his theories of congenital homosexualism which have unfortunately been overly-influential until this day.

The Hirschfeld-Mercer theory probably has a grain of solid truth. In the Mercer version, the theory states that, "It is a logical conclusion that the homosexual complex is only one of the deficiencies which, in sum, are characteristic of racial or individual infantilism, not atavistic—a turning backward—but a failure to develop the most advanced adult traits. Here we may note a very close association of traits that are characteristically infantile wherever found with traits that are characteristically homosexual: some degree of emotional instability, for instance; failure of a developed ability to fix attention. The list might be long and most illuminating" (p. 521). The grain of truth in this theory probably is that many seriously emotionally disturbed individuals, especially those who are borderline and outrightly psychotic, have a biological, genetic predisposition to being infantile or disturbed; and that many (though by no means all) such exceptionally disturbed individuals easily tend to acquire (especially in our antisexual society) disordered sexuality, including homosexualism.

Even if this were true, as it may well be, this would hardly prove, as Hirschfeld and Mercer are too eager to conclude, that homosexuality is *directly* congenital or inherited. Psychotics frequently take off their clothes and, if not restrained, saunter out in public in the nude. But this does not prove that they are congenital nudists. The chances are, as Mercer admits at many

points in his book, that human sex drives are quite non-directional in character from biological standpoint (that is, they are bisexual or plurisexual); that normal individuals in our society learn, for social reasons, to channelize their non-directional drives into exclusively heterosexual pathways; and that severely disturbed individuals (whether or not their disturbance is congenitally predisposed or is fully learned and acquired) frequently are not able to take the rather difficult, competitive, highly responsible heterosexual pathways but more easily fall into irregular, irresponsible, obsessive-compulsive homosexual or bisexual patterns of behavior.

In any event, Mercer's bias against psychological and sociological causes of fixed homosexuality is rather extreme; and he sticks solidly to Hirschfeld's forty-year-old statement that homosexuals are never "cured." This is nonsense: since a number of psychotherapists of widely different orientation, including the reviewer, have presented considerable evidence not only of exclusive homosexuals being enabled to derive considerable satisfaction from heterosexual relations but of some fixed deviants making a one hundred per cent change in their sexual orientation and winding up as exclusive heterosexuals.

Mercer also hoists himself on his own petard at several points in *They Walk in Shadow*, since he contends, as quoted above, that homosexuals are congenitally infantile and then insists that they are not necessarily neurotic. He savagely attacks several writers, as for example Dr. Marynia F. Farnham, for insisting that homosexuality must be considered a psychological disorder; but he also favorably quotes at length from the writer of this review, who even more strongly than Dr. Farnham insists that all exclusive homosexuals are necessarily neurotic or psychotic. Obviously, like so many contemporary homosexual apologists (among whom, fortunately, Donald Webster Cory is a rare exception), Mercer cannot bring himself to accept the fact that even though homophiles (like other sick people) should not be persecuted, they definitely and invariably should be treated for their psychosexual disturbances. Adjusting them to their homosexuality is, as I have pointed out in several previous publications, equivalent to adjusting a neurotic to his neurosis.

The main saving grace of Mercer's book is the last several chapters, consisting of almost half the book, which deal exhaustively with laws against homosexualism and other sex offenses. In these chapters the author takes a highly enlightened, rational, and persuasive view; and in them he has spoken out sanely and courageously against the needless and inhuman persecution of sex deviants which still persists in our society; and he makes some suggestions for changes in our sex laws that invite serious consideration. Although I cannot agree with many of his views on homosexuality, and believe that they still need considerable thinking-through and reintegration; I can go along with most of his unmaskings of the idiotically conflicting antisexual statutes which are still widely prevalent in this country.

Albert Ellis

ERIKSON, ERIK H. *Young Man Luther*. W. W. Norton & Co., New York, 1958. 288 pp. $4.50

It would be redundant to emphasize again the contribution of Erikson to the theory of personality development. He has been a prime mover in laying due stress on the synthetic as well as upon the purely defensive aspects of ego organization and function. In so doing, he has emphasized a heretofore neglected area in psychoanalysis, namely the ongoing nature of man's existence, with periodic crises, throughout his life. The character of these crises is determined not alone by the genetic history of the individual, but by the contingencies of circumstance and by the mutual impact of

the individual and of the interacting social pressures.

In *Young Man Luther* Erikson attempts to apply the insights he had developed elsewhere (*Childhood and Society*) to the youthful years of Martin Luther. In it he proposes to use psychoanalysis as a "historical tool." His aim is to attempt to correlate the "historical forces" and the "basic functions and stages of the mind" as exemplified in that period of Luther's life before Luther became a great man. In so doing, he presents much in psychological theory which is sound but its specific relevance to Martin Luther, and thus to the problem of history, is open to very substantial question. One gains a fuller sense of this book as a psychological novel than as representing the author's stated aim of casting scientific scrutiny on a historical figure. The criteria for the acceptance of data for consideration seems to depend heavily on "psychological dialectics," to use the author's term, with too little emphasis upon "historical dialectics." Thus, to illustrate, early in the book Erikson seems content to accept a set of conditions suitable to the psychoanalyst's office, with its necessary emphasis upon the existential state of man, which seems precarious if applied to history. Referring to the available reports of Luther's acute emotional episodes he states, "If some of it is legend, so be it; the making of legend is as much part of the scholarly rewriting of history as it is part of the original facts used in the work of scholars. We are thus obliged to accept half-legend as half-history, provided only that a reported episode does not contradict other well-established facts; persists in having a ring of truth; and yields a meaning consistent with psychological theory." This reader feels that when the "well-established facts" fall below a certain minimum, as they seem to do in the instance of Martin Luther before he became a great man, it would be best to view the product as a plausible and insightful study of a man, but not as psychohistorical. As it is, the author draws inferences from psychological theory as to historical events and then pretends to validate psychological theory from these inferences.

In the practice of clinical psychoanalysis, the process of sifting out the historical data from the maze of screen memories, retrospective falsifications and rationalizations of all sorts is the very meat of the psychoanalytic process. The avoidance of loose interpretations and of anything less than the most critical acceptance of historical data is primary to psychoanalysis as a discipline. This has to do with psychoanalysis both as a research tool and as a technique for the exploration of the psychic processes. Such general theories as have been evolved are invaluable in the process of conducting further such investigations but do not suggest that we can, with little data, make broad interpretations of any specific meaningfulness as regards any particular patient or other person. If, then, we apply our theory to a discrete historical figure, we can hardly expect such loose interpretations to do more than obscure matters in the same fashion as they would in the psychoanalytic process itself. This book opens with the statement that very few reliable data on the childhood and youth of Luther exist. Is this a *tabula rasa* upon which we can best project our theory?

Wherein Erikson chooses themes from Luther's early lectures and parallels them with psychoanalytic (and existential?) views, the quality of the authority with which he speaks assumes different proportions. This is particularly true in the latter part of the chapter on "The Meaning of 'Meaning it'." In it he emphasizes Luther's earlier insights on man in inner conflict and on man's search for salvation through introspection. While these insights were later obscured by Luther's and the Lutheran's Church-State coalition, they were again to be rediscovered by Kierkegaard and by Freud—by extentialism and by psychoanalysis. The establishment of

such correlations based upon the valid date of history offer a continuity and an orientation in man's development which supplies a useful sense of proportion for the continuing development of present day psychiatric and psychoanalytic thought.

It is of some interest that Erikson chose Luther's identity crisis, rather than that of some lesser figure. Ostensibly this was done because Luther presented to the author a particularly radical example of an identity crisis in an individual who was a prime force in the creation of a new ideology. (By the author's definition, an ideology is "an unconscious tendency underlying religious and scientific as well as political thought: the tendency at a given time to make facts amenable to ideas, and ideas to facts, in order to create a world image convincing enough to support the collective and the individual sense of identity"). Actually, in the choice of a world figure the author cannot but be limited by the very factors that made for greatness. Thus the author states, "... what specific gifts and what extraordinary opportunities permit them to impose this alternative (allness or nothingness) on whole nations and periods ... of this we know little." No doubt one might resort to the thesis that the identity crises of such persons are only different from that of the average man in degree and hence are more illustrative than would be the crisis of a less gifted man. The very capacity to be great suggests far more radical personality operations than are inferred. Erikson resorts to the thesis of successive crises in opposite directions to clarify apparently opposite trends in Luther. Where we have here to do with parallel trends, however mutually contradictory, and where with a reversal of identity is open to question and is not to be validated by the popular view of a man. The matter of the public image of a man is in itself not conclusive evidence of an equivalently radical alteration of inner identity. Greatness has as its referent the others' view and not necessarily that of the self. It may in fact be accompanied by any inner view of the self as a relatively independent variable.

In psychoanalytic theory, the concept of ambivalence and the theory of opposite impulse has undoubtedly been a useful one. Like any such thesis, however, the increasing institutionalization of such a concept has a stultifying rather than an enlightening influence. In the complex set of motivations which underlie the broad span of human behavior, the global concept of opposites tends to lose the usefulness which it has in the clinical analysis of relatively specific items of experience. In the clinical setting the role of a particular reaction formation, as for instance the role of shame or repulsion in connection with a given concealed impulse, cannot be gainsaid. I do not believe, however, that it is especially illuminating to employ equivalent concepts to overall behavior patterns. The author has attempted to do so by the implications that the complex series of events by and through which Luther created his theological system as a revolt against his father stands in opposite position to his later creation of the Church State, his reformation, through identification with his father.

Erikson, insofar as he chooses to reconstruct Luther's childhood in this book, lays some measure of emphasis on the more positive and constructive aspects of Luther's early life. He has heavily weighted his thesis, however, on the side of the traumata of Luther's early life and the conflictual character and problem-solving attempt in Luther's impressive career. While this throws some light on Luther's later emotional disturbance, it detracts from the exploration, even in a theoretical sense, of the experiential background through which such greatness is achieved. This illustrates the longstanding dilemma of psychoanalysis in viewing behavior other than in psychopathological terms. The whole sphere of sublimation and of effective ego operation still waits for a theory which stems not from

conflict but from early life experience in which constructive identifications are established from and through which man's innate curiosity and creativity may freely express itself. The unique insights and capacity to experience the world in a new way of the truly great is the adult counterpart of what is by no means special in childhood.

In discussing Luther's middle life depression, the author seems to take liberties with psychiatric diagnostic formulations which would be more appropriate were he in fact a historian. Thus he, at one point, refers to Luther's "severe manic-depressive state" and suggests that, in addition to purely psychological factors, a specific constitutional make-up might be a source of this disorder. Several pages later he refers to Luther's "poetic mind" as the source of his ready reference to the language of the unconscious and thus disposes of data which Erikson feels would indicate that Luther was "close to a psychosis." In the present preoccupation with dynamic constellations in psychoanalysis one would wonder whether the use of standard diagnostic classifications and the then repudiation of them by the resort to frames of reference which do not include them, can do other than confuse the reader. On the dynamic side Erikson would do well to offer some clarification, in view of the above appraisal of Luther, of his impression that Luther had "extraordinary resiliency" and a "great capacity to love." The reader can only assume that at this point the author lapses over into a semi-popular version of the concept of love and does not refer to love as a mature interpersonal experience.

Erikson states, with true insight, that "every age has its interpretations which seem to take care of inner interference with our plans and with our self esteem." While this statement was made in connection with Luther's invoking the devil as the source of meaningful slips, might we not apply it as well to the process of reconstructing the past in some presently meaningful fashion which we call history? Also in this present age of introspection and of psychology, may this not apply to what we call the psychohistorical? History in general, be it the individual patient's or of nations, is of little interest as a thing in itself but rather is of interest insofar as it throws light upon and has an impact upon man's present behavior. Insofar as one would recreate history to bear out certain current propositions as to the nature of man, one might ask what present value we might expect from this other than to further underwrite our already held views and to deny some further yet undiscovered and hence anxiety-laden view of man. To feel as if we can strike near to the core of the nature of Luther is to feel as if one can do the same in relation to ourselves. In both instances, and we sustain this through our knowledgeable attitude toward another, may we not be presenting defensive screen images with the intent of denying certain more critical and anxiety-arousing truths with regard to ourselves?

This book represents a courageous experiment in psychoanalytic thought which this reviewer found most provocative. Whether the psychoanalyst may be able to participate in the writing of history directly, or whether his influence will be an indirect one, through his influence as a maker of history upon the historical scholar, remains for the future to determine.

Samuel Novey

MASSERMAN, JULES, ED. *Science and Psychoanalysis.* Grune and Stratton, New York, 1958. vii + 201 pp. $5.75

This volume reports the proceedings of the first annual meeting of the Academy of Psychoanalysis, held in Chicago in 1957. It consists of seven papers, the remarks of seven discussants, an entertaining dinner address by Editor and then President of the Academy, and a brief outline of the earlier and subsequent history of that institution up to the press date of May, 1958. It is centered around the thesis that inspired the founda-

tion of the Academy, namely the need for a broadening of the basis and interests of the psychoanalytic movement in this country as it existed in the middle fifties. The topic of the meeting was "Integrative Studies" and the main papers are concerned with the relation of psychoanalysis to biology, to earlier psychological theories, anthropological theory, systems theory, philosophy, and with the problems of communication between psychiatrists and between therapists and their patients. The authors of these papers are, respectively, Rioch, Riese, Devereux, James G. Miller, Grinker, Ruesch, and Weigert; and the commentators were, in the same order, Heath, Ehrenwald, Kardiner, Hoch and Appel (both discussing the fourth and fifth papers), with incidental remarks by Rado, Bailey, and the original speakers.

It is usual to assess a book in terms of its own aims and then the aims themselves, and finally the book in terms of other aims that may be appropriate. In this case, there is no need to make these further investigations. A few words of quotation will show how unexceptionable the aims of the Academy are, if this is not already clear. Its energies should be directed, said the President in his first message to the Fellows, "... toward the application of the scientific method to the study of man. It is not enough that we simply exchange data, hypotheses, and theories. It is our obligation as scientific observers to examine the validity of the data, hypotheses, and theories presented, to raise pertinent questions, and to actively challenge or actively confirm" (p. 190). They fully realize that this policy will bring "... an inevitable modicum of misinterpretation and resentment from a few who may feel their doctrinaire citadels or political fiefs threatened..." (ibid.). Who can challenge such a program? And the author of those words feels that this symposium lived up to those high ideals; in his capacity as Editor of this volume he says "... there is hardly an unclear, stultified or routine paragraph in this volume, or one which does not stimulate productive thought" (p. vi).

It is indeed true that the movement needed such a reform. And it is indeed true that there are many interesting remarks in this volume. But, it being human to fall a little short of perfection, it must also be recorded that the new movement is itself showing some signs of falling into a trap which will have the same effect on the scientific value of its output as the dogmatic orthodoxy whose warped concept of its supporters as "the chosen few" gave birth to the Academy. This is the trap of supposing that the recognition of error is a substitute for the discovery of truth. It is common in these papers to come across enthusiastic cheers for the new-found freedom and the need for unfettered research. It is much less common to find any discussion of the exact nature of the difficulties that are involved apart from some well-worn remarks about the snares and advantages of protocal data. Two exceptions are the papers by Rioch and —for a quite different reason—that by Riese, which is not concerned with contemporary problems. Even Rioch, despite his remarkable learning, displays at least two methodological weaknesses: an inadequate analysis of purpose (which he quite correctly realizes can be an entirely respectable notion in a causal science), and an over-operational approach to such notions as 'meaning' and 'drive.' He also exhibits a tendency towards something which is connected with the undesirable aspects of the orthodoxy from which the group is trying to free itself, namely jargon. Riese's historical paper is very good, although in the opinion of this reviewer he is rather naive about the claims he makes concerning what Freud actually accomplished. Here is one example. "He finally succeeded in capturing these laws (of human behavior), thus conforming the results obtained from his exploration of thoroughly subjective phenomena to the nineteenth century concept

of science, founding its legitimacy exclusively on quantitative and objective criteria" (p. 51). If Freud had done that, there would have been no need for the formation of the Academy. Let me repeat that I am not suggesting there is any lack of the right attitude towards doing something other than taking in each other's washing as the orthodox have been doing for too long. The fault lies simply in a lack of knowledge as to exactly what else one can do in this field, and a lack of equipment for doing it. There is no substitute for a strict training in experimental design, theoretical methodology, and the results of other related sciences. There are very few psychiatrists today who have one of those three requirements, and it is perhaps unfortunate that the conditions of membership restrict it to psychoanalytically trained psychiatrists. (Though who else can afford annual dues of fifty dollars?)

When we come to the other papers, we begin to run into the consequences of this cross between good-will and bad equipment. The worst of all is Devereux's, and one gathers that the commentators held similar opinions. This paper is full of remarks about the logic and philosophy of science which would embarrass a student in any good undergraduate college in this country. (Examples; "... as Einstein and Russell pointed out long ago ... Heisenberg's concept of indeterminism has absolutely nothing to do with causality" (p. 73). Einstein and Russell pointed this out so long ago, in fact, that it isn't accepted any more, and I rather think was subsequently rejected by both of them.) Ruesch, whose motives are certainly beyond reproach, nevertheless says very little of interest although his paper includes the common fallacy about the irrelevance of judgments in relation to the morality of a society when judging the goals of therapy. James Miller gives an excellent account of the development of Freud's thought in three pages and then goes on into the higher realms of general systems theory, about which the kindest thing one can say is that it isn't provably false. Since this is a consequence of its lack of verifiable consequences it is not of very impressive merit. Grinker's "Philosophical Appraisal of Psychoanalysis" begins with a definition of philosophy which makes it sound like a symptom of cultural neurosis. "Philosophy, in general, is the expression of the conflicts and uncertainties of a particular culture at a specified time" (p. 126). On the contrary, the subject is frequently upbraided for its irrelevance to just these issues. As to whether it should be an expression of cultural conflict, it may be worth noting in passing that such criticisms are made only by people who think it is a kind of substitute for religion or therapy. But it is hardly surprising that with this definition, Grinker arrives at the conclusion that "... Despite the denials of Freud and many others, psychoanalysis as an approach to all of man's functioning conforms to the definition of a philosophy" (p. 140). It certainly does conform to his definition, but Freud had a more realistic idea of what philosophy was, no doubt partly because of his own work with translating Mill and studying under the first-rate philosopher Brentano. Mill's Logic is hardly a symptom of the cultural conflicts of his time. Grinker again stresses the possibility that psychoanalysis could become a science but is at the moment far from being one, and Appel supports him in his comments. But it is up to the Academy and any other group that thinks the subject is more than a waste of time, to be doing something about making it a science and not merely talking about how it should be done, as those of us who are merely reviewers are obliged to do. My comments are peppery, not because there is anything wrong with this collection of papers as a set of after-dinner speeches, but because it simply isn't good enough as the output of an institution with the high purposes of the Academy. Comparing this book with the somewhat similar one, *Psychoanalysis,*

Scientific Method and Philosophy, which has just been published (N.Y.U. Press), one sees the same excess of verbiage, the same outdated methodology (by both philosophers and analysts), but there is one notable difference; in the latter book there is a serious attempt by some of the participants—and I am glad to be among them—to really get down to some questions of substance, to the problems of validation and confirmation with respect to specific claims of psychoanalysis. There is no other way, and I hope that the Academy will realize that in the long run there is only one standard by which to judge a science—the standard of truth. Academy members have set foot in a field of which it may fairly be said there are none where the truth is harder to find and more worth finding. I hope they never publish another volume of their Proceedings in which not a single paper is devoted to the problems of confirmation. And I hope they publish many more volumes.

Michael Scriven

FREUD, SIGMUND AND OPPENHEIM, D. E. *Dreams in Folklore*. International Universities Press, New York, 1958. 111 pp. $3.00.

This attractive little volume contains what appears to be Freud's only previously unpublished paper of any significant length (some 40 pages), an interpretation of certain dreams told as comic anecdotes by "the common people," primarily those of Central and Eastern Europe. The English translation of the paper, performed by A. M. O. Richards under the supervision of James Strachey, is followed by the original German text.

The history of the work is of some interest in its own right. Oppenheim, a classical scholar, sent Freud a reprint of a paper on folklore which he dedicated to Freud, and which made reference to psychoanalytic observations. Thereupon Freud invited Oppenheim to collaborate in a psychoanalytic study of folklore (the letter of invitation appears in the present volume), an offer which was accepted. After Freud prepared the manuscript, working from raw material provided by his co-author, he left it with Oppenheim for final comment and revision. But Oppenheim shortly dissociated himself from Freud, never returned the manuscript to him, never published it, and never revealed its contents. Moreover, Freud himself never referred directly to the paper in his published works, doubtless because Oppenheim had "deserted to the enemy" and become an adherent of Adler. Bernard Pacella, in his preface to the book, relates how the manuscript was discovered and ultimately acquired by the Freud Archives.

The paper is divided into two parts: a brief discussion of Penis Symbolism in Dreams Occurring in Folklore, and a longer section dealing with Feces Symbolism and Related Dream Actions. (Dream actions are those which are carried out in a dream but are at the same time real actions—they are not discussed by Freud in *The Interpretation of Dreams*.) Most of the raw material is coarse and crude, some of it rather amusing, and one piece at least, "Song of the Earthworm," quite charming. Freud points out that "it is very much more convenient to study dream symbolism in folklore than in actual dreams," since dreams are obliged to conceal things, while folklore is intended to communicate them. He proceeds to an analysis of the symbolism in the comic anecdotes in his characteristic sure, clear, and compelling style. As Strachey indicates in the editor's introduction, although the manuscript was not revised by the authors for publication, it obviously requires very little editorial polishing.

At the time Freud suggested a collaborative venture to Oppenheim, Abraham and Rank had already followed him in seeking to apply psychoanalytic principles to the

study of mythology. Later a number of others, among them Jones and notably Jung, were also to make significant contributions to the psychological interpretation of myths, legends, and fairy tales. *Dreams in Folklore* deserves a special place on the shelf as a convincing demonstration that "folklore interprets dream symbols in the same way as psychoanalysis."

A. B. Silverstein